Compiler Warnings

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Application Note AN-ISC-8-1184

Author

Restrictions

Abstract

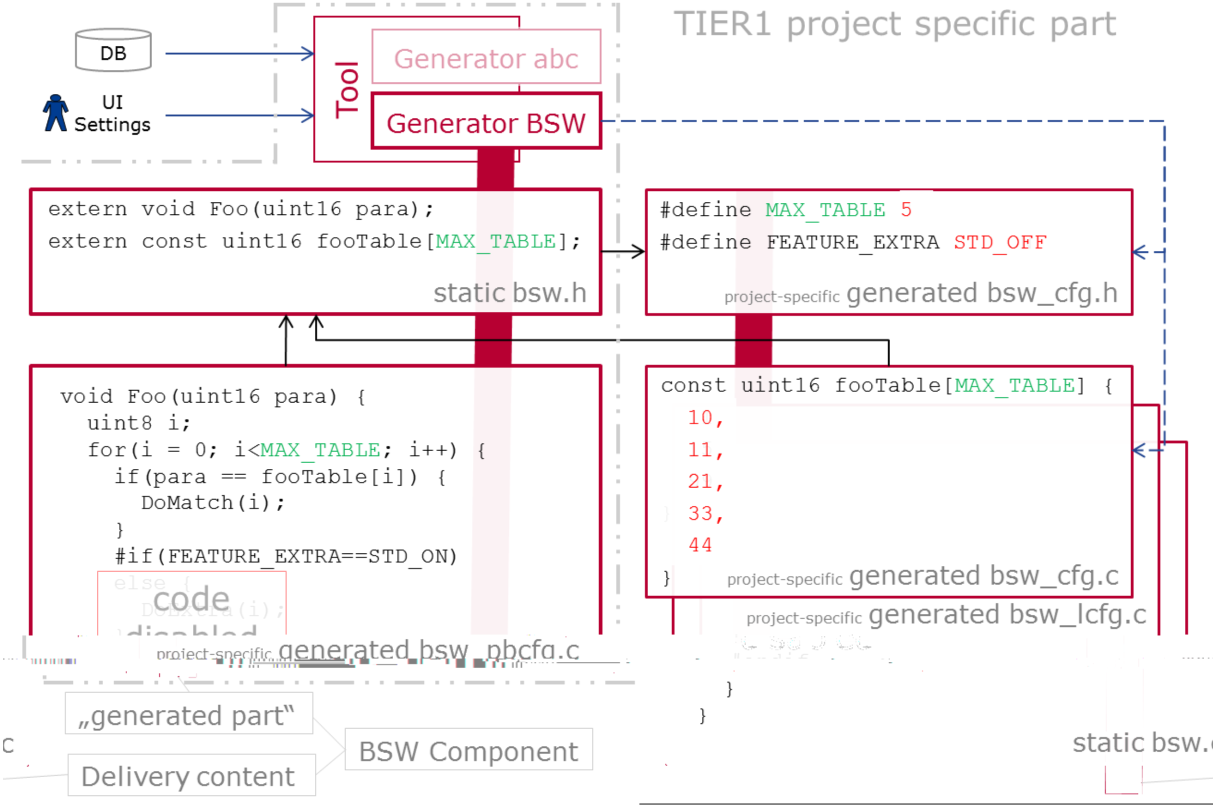
Table of Contents

1 Overview

MICROSAR BasicSoftware (BSW) is developed in a product line approach, independent from specific ECU projects or compilers. MICROSAR BSW supports the AUTOSAR MemoryAbstraction and CompilerAbstraction concepts and supports a huge range of different compiler vendors, versions and options.

MICROSAR BSW is delivered as static source code and code generators to support the ECU project specific adaption and optimization of the BSW behavior and feature set based on AUTOSAR configuration files and user defined selections.

Additionally, MICROSAR BSW supports compile time configuration, link time configuration and post-build configuration.



DB
UI Settings
Tool
Generator abc
Generator BSW
TIER1 project specific part
static bsw.h
project-specific generated bsw_cfg.h
project-specific generated bsw_cfg.c
project-specific generated bsw_lcfg.c
code disabled
project-specific generated bsw_pbcfg.c
„generated part“
Delivery content
BSW Component
static bsw.

```
extern void Foo(uint16 para);
extern const uint16 fooTable[MAX_TABLE];
```

```
#define MAX_TABLE 5
#define FEATURE_EXTRA STD_OFF
```

```
void Foo(uint16 para) {
  uint8 i;
  for(i = 0; i<MAX_TABLE; i++) {
    if(para == fooTable[i]) {
      DoMatch(i);
    }
    #if(FEATURE_EXTRA==STD_ON)
    else {
      DoExtra(i);
```

```
const uint16 fooTable[MAX_TABLE] {
  10,
  11,
  21,
  33,
  44
}
```

```
    }
  }
```

Figure 1 MICROSAR BSW Component

MICROSAR BSW is based on MISRA-C:2004. Checks for MISRA compliance are an essential part of

(http://www.automotive-his.de) all rules are active.

Nevertheless, we accept deviations to t

Document [2] explains the relationship between user-selected code generation (optimization) options and compiler warnings.

1.1 Deviation Procedure

Priority	Rule	Rationale
		-

Table 1 Priority of measures to prevent compiler warnings

1.2 Default BSW Delivery Process

The configuration and compilation and linkage during the delivery test activities yield most of the compiler warnings, because the development tool chain and settings specified by you are used.

The process in short is:

- Customer specifies the compiler brand, version and options (via Questionnaire) and provides more information on the expected use-case
- Delivery engineer creates example configurations of the BSW and compiles and links the outcome
- Compiler warning
- the delivery documen

2 Accepted Deviations

- it has been checked that no incorrect behavior at ECU runtime occurs
- no simple remedy exists

Information

Table 1 Priority of measures to prevent compiler warnings

2.1 Unused/unreferenced parameter/argument

Deviation ID	
Example compiler warning strings	-
Reason	
Configuration dependent	
Potential risk	
Prevention of risk	
Note	-

Table 2 CW_001

2.2 Unused/unreferenced define, enum value

Deviation ID	
Example compiler warning strings	
Reason	-
Configuration dependent	
Potential risk	
Prevention of risk	
Note	-

Table 3 CW_002

2.3 Unused/unreferenced variable

Deviation ID	
Example compiler warning strings	
Reason	
Configuration dependent	
Potential risk	
Prevention of risk	
Note	-

Table 4 CW_003

2.4 Unused/unreferenced function

Deviation ID	
Example compiler warning strings	
Reason	-
Configuration dependent	
Potential risk	
Prevention of risk	
Note	-

Table 5 CW_004

2.5 Condition evaluates always to true/false

Deviation ID	
Example compiler warning strings	
Reason	- - -
Configuration dependent	
Potential risk	
Prevention of risk	
Note	-

Table 6 CW_005

2.6 Unreachable code/statement

Deviation ID	
Example compiler warning strings	
Reason	
Configuration dependent	
Potential risk	
Prevention of risk	
Note	-

Table 7 CW_006

2.7 Dead assignment / variable set but not used

Deviation ID	
Example compiler warning strings	
Reason	
Configuration dependent	
Potential risk	
Prevention of risk	
Note	-

Table 8 CW_007

2.8 ASM statements used

Deviation ID	
Example compiler warning strings	
Reason	
Configuration dependent	
Potential risk	
Prevention of risk	
Note	-

Table 9 CW_008

3 Additional Resources

No	Source	Title	Version
		-	

4 Contacts

For a full list with all Vector locations and addresses worldwide, please visit http://vector.com/contact/.