



JPL INSTITUTIONAL CODING STANDARD FOR THE  
C PROGRAMMING LANGUAGE |  
CLOSE & BROAD MAPPING TO CODESONAR<sup>®</sup> 7.4

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## INTRODUCTION

The following table shows the CodeSonar warning classes that are associated with JPL rules.

**Note close and broad mappings are identical, thus only one chart below to reflect both close and broad mapping.**

Rule	Rule Name	Supported
JPL:1	Do not stray outside the language definition.	Yes
JPL:2	Compile with all warnings enabled; use static source code analyzers.	Yes
JPL:3	Use verifiable loop bounds for all loops meant to be terminating.	Yes
JPL:4	Do not use direct or indirect recursion.	Yes
JPL:5	Do not use dynamic memory allocation after task initialization.	Yes
JPL:6	Use IPC messages for task communication.	No
JPL:7	Do not use task delays for task synchronization.	Yes
JPL:8	Explicitly transfer write-permission (ownership) for shared data objects.	No
JPL:9	Place restrictions on the use of semaphores and locks.	Yes
JPL:10	Use memory protection, safety margins, barrier patterns.	No
JPL:11	Do not use goto, setjmp or longjmp.	Yes
JPL:12	Do not use selective value assignments to elements of an enum list.	Yes
JPL:13	Declare data objects at smallest possible level of scope.	Yes
JPL:14	Check the return value of non-void functions, or explicitly cast to (void).	Yes
JPL:15	Check the validity of values passed to functions.	Yes
JPL:16	Use static and dynamic assertions as sanity checks.	Yes
JPL:17	Use U32, I16, etc instead of predefined C data types such as int, short, etc.	Yes
JPL:18	Make the order of evaluation in compound expressions explicit.	Yes
JPL:19	Do not use expressions with side effects.	Yes
JPL:20	Make only very limited use of the C pre-processor.	Yes
JPL:21	Do not define macros within a function or a block.	Yes
JPL:22	Do not undefine or redefine macros.	Yes
JPL:23	Place #else, #elif, and #endif in the same file as the matching #if or #ifdef.	Yes
JPL:24	Place no more than one statement or declaration per line of text.	Yes
JPL:25	Use short functions with a limited number of parameters.	Yes
JPL:26	Use no more than two levels of indirection per declaration.	Yes
JPL:27	Use no more than two levels of dereferencing per object reference.	Yes
JPL:28	Do not hide dereference operations inside macros or typedefs.	Yes
JPL:29	Do not use non-constant function pointers.	No
JPL:30	Do not cast function pointers into other types.	Yes
JPL:31	Do not place code or declarations before an #include directive.	Yes

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