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Audience: WG21

# C23 Update Report

## Summary of Changes

R0

- Initial Document

## Introduction

This paper is intended to inform WG21 of what features have already been adopted for the upcoming release of C, expected to be C23, as well as what features are actively being pursued but have not yet been adopted. All N-numbered documents in this paper refer to the WG14 document registry.

## C23 Marquee Features

Attributes ([N2335](#), [N2554](#))

Are compatible with C++ syntax and semantics.

TS 18661 integration ([N2314](#), [N2341](#), [N2401](#))

ISO 60559:2011/IEEE 754-2008 compatible with an eye towards the future adds new floating-point types and a pile of new functions.

## Features for C++ Compatibility

Harmonizing `static_assert` with C++ ([N2265](#))

Querying attribute support ([N2553](#))

`nodiscard` attribute ([N2267](#), [N2448](#))

`maybe_unused` attribute ([N2270](#))

`deprecated` attribute ([N2334](#))

`fallthrough` attribute ([N2408](#))

Two's complement sign representation ([N2412](#))

`u8` character prefix ([N2418](#))

`_Bool` definitions for `true` and `false` ([N2393](#))

Allowing unnamed parameters in function definitions ([N2510](#))

Binary literals ([N2549](#))

Allow duplicate attributes ([N2557](#))

Remove mixed wide string literal concatenation ([N2594](#))

digit separators ([N2626](#))

## Other Features of Interest

Lifting some functions from POSIX ([N2349](#), [N2353](#))

Adds `memccpy`, `strdup`, and `strndup`.

Miscellaneous

Fixed about 15 defect reports.

Thread-safe time conversion functions ([N2417](#))

Removed support for K&R C-style identifier list definitions ([N2432](#))

`#elifdef` and `#elifndef` ([N2645](#))

## Unadopted Features Being Explored

Pointer provenance and correcting the C memory and object models

Being explored by the Memory Object Model study group, coordinating with SG12.

`__has_include` ([N2673](#))

Being explored for C++ compatibility.

`#embed` ([N2592](#))

Concurrently being explored by WG21.

lambdas ([N2736](#), [N2737](#), [N2738](#))

`nullptr` ([N2692](#))

type inference ([N2735](#))

`typeof` ([N2685](#))

Not identical to `decltype`, but covers the same general design space.

bit-precise integer types ([N2709](#))

integer-safe arithmetic ([N2683](#))

`defer` and `panic` ([N2589](#))