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Draft IS/ISO/IEC 14882:2024
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BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

मसौदा भारतीय मानक

प्रोग्रामिंग भाषाएँ - सी + +

(दूसरा पुनरीक्षण)

Draft Indian Standard
Programming languages — C++

(Second Revision)

ICS 35.060

Data Management System Sectional Committee, LITD 15	**Last Date for Comments: 14 April 2025**

NATIONAL FOREWORD

(Formal clauses will be added later)

This draft Indian Standard (Second Revision) which is identical to 'ISO/IEC 14882:2024 Programming languages — C++' issued by the International Organization Standardization (ISO) and International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian

Standards (BIS) on the recommendations of the Data Management System Sectional Committee and approval of the Electronics and Information Technology Division Council.

This Standard was originally published in 2019 and was identical with ISO/IEC 14882: 2017. The first revision of this standard was published in 2022 which was identical with ISO/IEC 14882: 2020. The second revision of this standard has been undertaken to align it with the latest version of ISO/IEC 14882:2024.

The main changes are as follows:

— improved support for Unicode;

— improved support for programming with constant expressions and constant evaluation;

— addition of a new way to declare non-static member functions with an “explicit this parameter”;

— addition of support for #elifdef and #elifndef preprocessing directives;

— change of overloaded operator[] to allow multiple parameters;

— change of lifetime rules in range-based for loops;

— addition of a new “decay-copying” declaration “auto(x)”;

— support for extended floating-point types;

— addition of facilities for explicit lifetime management;

— addition of facilities for expressing assumptions;

— addition of standard library modules;

— addition of new standard library container and view types;

— addition of new standard library algorithms;

— addition of a generator type for use with coroutines;

— addition of an “expected” type for error handling;

— addition of string formatting and printing facilities;

— technical corrections and enhancements of existing core language and library facilities.

The text of ISO/IEC Standard may be approved as suitable for publication as an Indian Standard without deviations. Certain conventions and terminologies are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard', and

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

International Standards	**Corresponding Indian Standard**	**Degree of Equivalence**
ISO/IEC 2382, Information technology — Vocabulary	IS/ISO/IEC 2382 : 2015 Information Technology- Vocabulary (First Revision)	Identical with ISO 2382 -15: 1985
ISO 8601-1:2019, Date and time — Representations for information interchange — Part 1: Basic rules	IS/ISO 8601-1 : 2019 Date and Time Representations For Information Interchange Part 1: Basic Rules	Identical with ISO 8601-1 : 2019
ISO/IEC 9899:2018, Information technology — Programming languages — C	IS/ISO/IEC 9899 : 2018 Information Technology — Programming Languages — C	Identical with ISO/IEC 9899 : 2018
ISO 80000-2:2019, Quantities and units — Part 2: Mathematics	IS/ISO 80000-2 : 2019 Quantities and units Part 2 : Mathematics	Identical with ISO 80000-2 : 2019

The technical committee has reviewed the provisions of the following International Standard referred in this adopted draft standard and has decided that it is acceptable for use in conjunction

with this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:-

International Standard	Title
ISO/IEC/IEEE 9945:2009,	Information Technology — Portable Operating System Interface (POSIX®)1 Base Specifications, Issue 7
ISO/IEC/IEEE 9945:2009/Cor 1:2013	Information Technology — Portable Operating System Interface (POSIX®) Base Specifications, Issue 7 — Technical Corrigendum 1
ISO/IEC/IEEE 9945:2009/Cor 2:2017	Information Technology — Portable Operating System Interface (POSIX®) Base Specifications, Issue 7 — Technical Corrigendum 2
Ecma International	ECMAScript2 Language Specification, Standard Ecma-262, third edition, 1999.

Scope of ISO/IEC 14882: 2024 is as follows:

"This document specifies requirements for implementations of the C++ programming language. The first such requirement is that an implementation implements the language, so this document also defines C++. Other requirements and relaxations of the first requirement appear at various places within this document.

C++ is a general purpose programming language based on ISO/IEC 9899:2018. C++ provides many facilities beyond those provided by ISO/IEC 9899:2018, including additional data types, classes, templates, exceptions, namespaces, operator overloading, function name overloading, references, free store management operators, and additional library facilities."

Note: - The Technical content of this document has not been enclosed as these are identical with the corresponding ISO/IEC Standard. For details please refer to ISO/IEC 14882: 2024 or kindly contact

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