

ISO/IEC JTC 1 "Information technology"

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SC 22 Business Plan 2025

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Description

This document is circulated for review and consideration at the November 2025 JTC 1 Plenary.

ISO/IEC JTC 1/SC 22 Programming languages strategic business plans

1.0 Executive Summary

ISO/IEC JTC 1/SC 22 Programming languages, their environments and system software interfaces

Scope:

JTC1/SC 22 is the international standardization subcommittee for programming languages, their environments, and system software interfaces. SC 22 is often times called the "portability subcommittee".

JTC 1/SC 22 and its working groups history can be found [here](#).

The classic programming languages, for which SC 22 is well known, remain popular with major development work going on in Ada, C, C++, COBOL, Fortran, and Prolog. Interest continues in the WG documenting vulnerabilities of various programming languages, which is part of our effort to ensure consumer-related concerns are addressed even when consumers do not have the technical expertise or interest. Operating system work is also progressing in Linux and POSIX.

2.0 Environment

This varies widely from one WG to another, from little activity besides DR processing in some, to high activity in others. The C and C++ language WGs continue to have high participation, both in the number of members and NBs. The same is true for the WG documenting vulnerabilities of various programming languages. Participation in the other active WGs ranges from barely adequate to good.

Newer languages tend to develop their standards using an open-source model, with both the work-in-progress and the final product publicly available for free on Github or similar sites. The ISO/IEC business model precludes this. Consequently, it remains difficult to attract new languages, because they would lose the openness expected by their communities.

3.0 Achievements and benefits

Since the last report, JTC 1/SC 22 has published eight documents. These include:

- A revision to the C standard.
- A language-independent catalog of vulnerabilities.
- Several technical specifications extending functionality for C and C++.

Published Documents (2024–2025):

- **ISO/IEC TS 13211-3:2025** — *Programming Languages — Prolog — Part 3: Definite Clause Grammar Rules as an Extension of ISO/IEC 13211-1*
- **ISO/IEC TS 6010:2025** — *Programming Languages — C — A Provenance-Aware Memory Object Model for C*
- **ISO/IEC TS 18661-4:2025** — *Floating-Point Extensions for C — Part 4: Supplementary Functions*
- **ISO/IEC TS 18661-5:2025** — *Floating-Point Extensions for C — Part 5: Supplementary Attributes*

- **ISO/IEC TS 24718:2025** — *Guidance for the Use of the Ada Ravenscar Profile in High-Integrity Systems*
- **ISO/IEC TS 9922:2024** — *C++ Extensions for Concurrency 2*
- **ISO/IEC 9899:2024** — *Programming Languages — C*
- **ISO/IEC 24772-1:2024** — *Avoiding Vulnerabilities in Programming Languages — Part 1: Language-Independent Catalogue of Vulnerabilities*

Many of the standards produced and maintained in JTC 1/SC 22 are mature and widely adopted by specific industries. Others remain foundational technologies and are well-received in the broader marketplace.

For example, Ada continues to be the language of choice in real-time embedded systems, aerospace, and defense. C++, which has long enjoyed widespread popularity, is seeing renewed interest for its performance, hardware efficiency, and especially power efficiency, making it well-suited for mobile devices, cloud data centers, high-performance financial systems, vector processing, and GPGPU computing. SC 22 is now exploring the standardization of nonstandard C++ extensions widely used in these sectors.

4.0 Participation and cooperation/collaboration.

The current number of participating (P) and observing (O) members of SC 22 can be found [here](#).

Plenary Meeting Participation:

- **2024 SC 22 Plenary:** 30 participants from 10 P-members
- **2025 SC 22 Plenary:** 56 participants from 16 different countries

Liaison Relationships

A complete list of SC 32's liaison relationships—including those with other ISO and IEC committees, as well as external organizations and consortia—can be found [here](#).

5.0 Objectives and strategies to achieve them

All of JTC 1/SC 22 working groups are investigating or further progressing the revisions to the programming language standards, which include Fortran, Ada, C, and C++, to incorporate feature updates and clarifications.

6.0 Factors affecting completion and adoption of the work program

A recurring challenge for mature language standards is resource availability, particularly as subject matter experts retire or are aging participation.

Many WGs have expressed concern over the continued lack of public access to working group documents (excluding drafts and published standards). Public access is seen as essential for community review, feedback, and increasing participation.

Additionally, ISO/CS has determined that Technical Specifications (TS) can no longer be used to describe new technologies intended for future integration into standards. SC 22 believes this conflicts with ISO/IEC Directives Part 1, which states that a TS may document subjects still under development. This policy change has delayed DTS ballots and publication timelines for several ongoing TS developments.

Standards in maintenance mode also face challenges due to required restructuring to align with Directives Part 2 and the ISO House Style Guide. For example, revising ISO/IEC 13211-1 (Prolog – General Core) has raised concerns that clause renumbering, necessitated by eliminating hanging paragraphs, would cause confusion and undermine the standards' role as reliable references.

7.0 Structure, current projects, and publications

The current structure of SC 22 can be found [here](#).

Since the last report in 2024, 8 new documents have been published, and 6 projects have been initiated.

Here are the lists of the projects under SC 22

- [Published](#)
- [Under development](#)