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Programming Languages — Technical Specification for C++ Extensions for Parallelism

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National foreword

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Foreword

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ISO/IEC TS 19570 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 22, *Programming languages, their environments and system software interfaces*.

Contents

1 General [parallel.general]

1.1 Scope [parallel.general.scope]

1 This Technical Specification describes requirements for implementations of an interface that computer programs written in the C++ programming language may use to invoke algorithms with parallel execution. The algorithms described by this Technical Specification are realizable across a broad class of computer architectures.

2 This Technical Specification is non-normative. Some of the functionality described by this Technical Specification may be considered for standardization in a future version of C++, but it is not currently part of any C++ standard. Some of the functionality in this Technical Specification may never be standardized, and other functionality may be standardized in a substantially changed form.

3 The goal of this Technical Specification is to build widespread existing practice for parallelism in the C++ standard algorithms library. It gives advice on extensions to those vendors who wish to provide them.

1.2 Normative references [parallel.general.references]

1 The following referenced document is indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

— ISO/IEC 14882:—[1], *Programming Languages — C++*

2 ISO/IEC 14882:— is herein called the *C++ Standard*. The library described in ISO/IEC 14882:— clauses 17-30 is herein called the *C++ Standard Library*. The C++ Standard Library components described in ISO/IEC 14882:— clauses 25, 26.7 and 20.7.2 are herein called the *C++ Standard Algorithms Library*.

3 Unless otherwise specified, the whole of the C++ Standard's Library introduction (C++14 §17) is included into this Technical Specification by reference.

1.3 Namespaces and headers [parallel.general.namespaces]

1 Since the extensions described in this Technical Specification are experimental and not part of the C++ Standard Library, they should not be declared directly within namespace `std`. Unless otherwise specified, all components described in this Technical Specification are declared in namespace `std::experimental::parallel::v1`.

[*Note:* Once standardized, the components described by this Technical Specification are expected to be promoted to namespace `std`. — *end note*]

2 Unless otherwise specified, references to such entities described in this Technical Specification are assumed to be qualified with `std::experimental::parallel::v1`, and references to entities described in the C++ Standard Library are assumed to be qualified with `std::`.

3 Extensions that are expected to eventually be added to an existing header `<meow>` are provided inside the `<experimental/meow>` header, which shall include the standard contents of `<meow>` as if by

1. To be published. Section references are relative to N3937.