

ISO/IEC 18026(E):201x Edition 3 Committee Draft Cover Letter

In accordance with Resolution 26 of the 2009 ISO/IEC JTC 1/SC 24 Plenary Meeting (N3182), the accompanying Committee Draft (CD) is a new edition that incorporates the content of the proposed Amendment 1 to Edition 2 of ISO/IEC 18026 (as outlined in the New Work Item Proposal, N3084).

To facilitate the review of this CD, and given the complex modifications to linkages between various clauses and the numerous changes and corrections to the text, this document highlights the significant changes from Edition 2. The significant changes are listed according to the New Work Item Proposal (NWIP) item number.

NWIP 1) Comprehensive and improved treatment of geodesics

Subclause 10.7 *Geodesic distance operations* is completely rewritten. The expanded treatment includes additional functionality. In particular, in Clause 11, new methods (*GeodesicDistanceWithAzimuths*, and *GeodesicDestination*) have been added to the base class *BaseSRFwithEllipsoidalHeight* (subclause 11.3.5.5). Supporting this change is a revision to Annex A.7.4 *Geodesics on an ellipsoid* and to A.7.1.3 *Angle between curves*. Subclause 5.8.3.4 *Geodetic azimuth and map azimuth* now references 10.7.

NWIP 2) Similarity transformation templates (STT)

The STT concept has been introduced in subclause 4.3 *Position-space and normal embeddings* and added in subclauses 7.3.2 *Similarity transformations* and 7.3.3 *Similarity transformation template*. The STT concept is now used as a replacement for the “seven-parameter transformation” in the specification of an RT for an ORM, in the *Operations* clause and in the *Application program interface* clause (11.2.7.12 *STT_Code*, and 11.2.9.3 *STT parameters*). ORM specifications in Annex E now use STTs as proposed, and Annex H has changed accordingly. The content of Annex B.6 and B.7 has been moved to notes and examples in Clause 7.

NWIP 3) Revision of informative Annex I.6 to cover all cases of positional error measurement

Subclause I.6 *Error metrics for SRF operations* is completely revised.

NWIP 4) Improve Accuracy domains in the Default profile (Clause 12)

Table 12.2 — *Default profile specification* has been revised to provide testable accuracy domains for all table entries.

NWIP 5) Extend the SRM treatment of Direction to the concepts of vector, orientation, and rotation, and include corresponding API functions

Clause 6 *Orientation* adds the proposed content. The new concepts are introduced in subclause 4.9 *Orientation*. Clause 6 *Orientation* replaces Clause 6 *Temporal coordinate systems*. As temporal coordinate system concepts are treated in other standards, a Temporal CS is no longer a registerable item. The temporal coordinate system concepts required for the SRM have been moved to subclause 4.6.2 *Temporal coordinate systems*.

Content in Clause 6 *Orientation* is used and referenced in Clause 7 (7.3.2 *Similarity transformations* and 7.3.3 *Similarity transformation template*), new operations are introduced in subclause 10.5 *Operations on directions, vectors, and orientations*, and new classes and methods are specified in 11.2.9.4 *Orientation representation parameters*, 11.3.5.7 *Orientation*, and 11.3.11 *Concrete subclasses of Orientation*, as well as new methods in *BaseSRF3D*.

NWIP 6) Other improvements to the above standards that may be identified by JTC 1/SC 24/WG 8 during the development of this work item

The editors have made numerous editorial and self-consistency improvements, and have corrected a number of defects that were found during the preparation of the CD. The defects and their respective changes are documented in WG 8 N0528 and WG 8 N0529.

On behalf of the ISO/IEC 18026 Editors,
Paul Berner