***भारतीय मानक***

***भौगोलिक सूचना –***

***भौगोलीय मार्कअप भाषा ( जी एम एल )–***

***भाग 1 मूलसिद्धान्त***

*(पहला पुनरीक्षण)*

***Indian Standard***

***Geographic Information —***

***Geography Markup Language (GML) —***

***Part 1 Fundamentals***

*(First Revision)*

***ICS:* 35.240.70**

**BUREAU OF INDIAN STANDARDS**

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# Geospatial Information Sectional Committee LITD 22

# NATIONAL FOREWORD

This Indian Standard (Part 1) which is identical to ISO 19136-1 : 2020 ‘Geographic information — Geography Markup Language (GML) — Part 1 Fundamentals’ issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Geospatial Information Sectional Committee, LITD 22 and the approval of the Electronics and Information Technology Division Council.

IS 16626: 2017 ‘Geographic Information - Geography Markup Language (GML)’ was originally published in 2017 and was identical to ISO 19136: 2007. ISO 19136 has been divided in 2 parts. This standard has been revised to align with latest version of ISO 19136-1 : 2020.

The main changes compared to the previous edition are as follows:

1. the XML attribute gml:id in gml:AbstractGMLType has been made optional;
2. the elements gml:AbstractRing and gml:Shell have been added to the substitutionGroups gml:AbstractCurve and gml:AbstractSurface respectively;
3. the types gml:AbstractRingType and gml:ShellType are now extended from base types gml:AbstractCurveType and gml:AbstractSurfaceType respectively;
4. These changes correct inconsistencies with ISO 19107 without breaking the validity of instance documents created using the GML 3.2.1 schema. i.e. all GML 3.2 instance documents that are valid against the GML 3.2.1 schema are also valid against the GML 3.2.2 schema.

This standard is published in two parts. The other part in this series is:

Part 2: Extended Schemas and Encoding Rules

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are however not identical to those used in Indian Standards. Attention is particularly drawn to the following:

1. Wherever the words ‘International Standard’ appear referring to this standard, they should be read as ‘Indian Standard’.
2. 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 places, are listed below along with their degree of equivalence for 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 Standard* | *Corresponding Indian Standard* | *Degree of Equivalence* |
| ISO 8601-1 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 80000-3 Quantities and units — Part 3: Space and time | IS/ISO 80000-3 : 2019 Quantities and units Part 3: Space and Time | Identical with  ISO 80000-3 : 2019 |

The technical committee has reviewed the provisions of following International Standards referred in this adopted standard and has decided that they are 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:

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| --- | --- |
| *International Standard* | *Title* |
| ISO/IEC 11404:2007 | Information technology — General-Purpose Datatypes (GPD) |
| ISO 19108:2002 | Geographic information — Temporal schema |
| ISO 19123:2005 | Geographic information — Schema for coverage geometry and functions |
| ISO/IEC 19757-3 | Information technology — Document Schema Definition Languages (DSDL) — Part 3: Rule-based validation — Schematron |
| IETF RFC 2396 | Uniform Resource Identifiers (URI): Generic Syntax (August 1998) |
| W3C XLink | XML Linking Language (XLink) Version 1.1, W3C Recommendation (6 May 2010) |
| W3C XML | Extensible Markup Language (XML) 1.0 (Fifth Edition), W3C Recommendation (26 November 2008) |
| W3C XML Namespaces | Namespaces in XML 1.0 (Third Edition), W3C Recommendation (8 December 2009) |
| W3C XML Schema  Part 1 | XML Schema Part 1: Structures, W3C Recommendation (28 October 2004) |
| W3C XML Schema  Part 2 | XML Schema Part 2: Datatypes, W3C Recommendation (28 October 2004) |

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 ‘Rules for rounding off numerical values (*Second Revision*)’.The number of significant places retained in the rounded off value should be same as that of the specified value in this standard