



VISION

A WORLD OF QUALITY PRODUCTS

MISSION

TO EXCEL AND BE INTERNATIONALLY RECOGNIZED IN METROLOGY,
STANDARDIZATION, TESTING AND QUALITY ASSURANCE
AND ENSURE ECONOMIC DEVELOPMENT AND FAIR TRADE



The Kenya Bureau of Standards

GEO-INFORMATION STANDARDIZATION AT ISO & DEVELOPMENT OF KENYA STANDARDS

PRESENTATION AT THE KNSDI STANDARDS
SEMINAR

MASINZA A. STANSLAUS
KENYA BUREAU OF STANDARDS

masinzas@kebs.org – www.kebs.org



Outline

1. Who is ISO
2. How are ISO Standards Developed
3. TC 211 – Geographical Information/Geomatics TC
4. Development of Kenya Standards
5. Way Forward



Who is ISO ?

- An Acronym, Greek *'isos'* meaning *'equal'*
- ISO refers to the International Organization for Standardization.
- ISO
 - is a network of the national standards bodies of 156 countries, on the basis of one member per country
 - Central Secretariat in Geneva, Switzerland
 - www.iso.org
- Kenya is a member of ISO and is a P-member to 80 TCs and O-member to 90 TCs.



How are ISO standards developed?

Principles of development:

- **Consensus** - The views of all interests are taken into account: manufacturers, vendors and users, consumer groups, testing laboratories, governments, engineering professions and research organizations.
- **Industry-wide** - Global solutions to satisfy industries and customers worldwide.
- **Voluntary**
International standardization is market-driven and therefore based on voluntary involvement of all interests in the market-place.
- **Market-driven**
ISO develops only those standards for which there is a market requirement. The work is carried out by experts from the industrial, technical and business sectors which have asked for the standards, and which subsequently put them to use. Joined by others with relevant knowledge, such as government agencies, consumer organizations, academia and testing laboratories.



ISO TC 211 - Geographic information / Geomatics

- *Scope:*

Standardization in the field of digital geographic information.

- This work aims to establish a structured set of standards for information concerning objects or phenomena that are directly or indirectly associated with a location relative to the Earth. These standards may specify, for geographic information, methods, tools and services for data management (including definition and description), acquiring, processing, analyzing, accessing, presenting and transferring such data in digital / electronic form between different users, systems and locations.
- The work shall link to appropriate standards for information technology and data where possible, and provide a framework for the development of sector-specific applications using geographic data.



ISO TC 211 - Geographic information / Geomatics

Work Groups

- TC 211/WG 4 Geospatial services
- TC 211/WG 6 Imagery
- TC 211/WG 7 Information communities
- TC 211/WG 8 Location based services
- TC 211/WG 9 Information management

32 standards published so far



ISO TC 211 – Published Standards

1. [ISO 6709:1983](#) Standard representation of latitude, longitude and altitude for geographic point locations
2. [ISO 19101:2002](#) Geographic information -- Reference model
3. [ISO/TS 19103:2005](#) Geographic information -- Conceptual schema language
4. [ISO 19105:2000](#) Geographic information -- Conformance and testing
5. [ISO 19106:2004](#) Geographic information -- Profiles
6. [ISO 19107:2003](#) Geographic information -- Spatial schema
7. [ISO 19108:2002](#) Geographic information -- Temporal schema
8. [ISO 19108:2002/Cor 1:2006](#)
9. [ISO 19109:2005](#) Geographic information -- Rules for application schema
10. [ISO 19110:2005](#) Geographic information -- Methodology for feature cataloguing
11. [ISO 19111:2003](#) Geographic information -- Spatial referencing by coordinates
12. [ISO 19112:2003](#) Geographic information -- Spatial referencing by geographic identifiers
13. [ISO 19113:2002](#) Geographic information -- Quality principles
14. [ISO 19114:2003](#) Geographic information -- Quality evaluation procedures
15. [ISO 19114:2003/Cor 1:2005](#)
16. [ISO 19115:2003](#) Geographic information – Metadata



ISO TC 211 – Published Standards

17. [ISO 19115:2003/Cor 1:2006](#)
18. [ISO 19116:2004](#) Geographic information -- Positioning services
19. [ISO 19117:2005](#) Geographic information -- Portrayal
20. [ISO 19118:2005](#) Geographic information -- Encoding
21. [ISO 19119:2005](#) Geographic information -- Services
22. [ISO/TR 19120:2001](#) Geographic information -- Functional standards
23. [ISO/TR 19121:2000](#) Geographic information -- Imagery and gridded data
24. [ISO/TR 19122:2004](#) Geographic information / Geomatics -- Qualification and certification of personnel
25. [ISO 19123:2005](#) Geographic information -- Schema for coverage geometry and functions
26. [ISO 19125-1:2004](#) Geographic information -- Simple feature access -- Part 1: Common architecture
27. [ISO 19125-2:2004](#) Geographic information -- Simple feature access -- Part 2: SQL option
28. [ISO/TS 19127:2005](#) Geographic information -- Geodetic codes and parameters
29. [ISO 19128:2005](#) Geographic information -- Web map server interface
30. [ISO 19133:2005](#) Geographic information -- Location-based services -- Tracking and navigation
31. [ISO 19135:2005](#) Geographic information -- Procedures for item registration
32. [ISO/TS 19138:2006](#) Geographic information -- Data quality measures



Who does the work?

- The technical work of ISO is highly decentralized, carried out in a hierarchy of some 2940 TCs, SCs and WGs.
- Representatives of
 - industry,
 - research institutes
 - government authorities
 - consumer bodies, and
 - international organizations

Some 30 000 experts participate in meetings each year.



Stage 1: Proposal stage

- confirm that a particular International Standard is needed.
 - A new work item proposal (NP) is submitted for vote by the members of the relevant TC/SC to determine the inclusion of the work item in the program of work.
- The proposal is accepted if a majority of the P-members of the TC/SC votes in favour and **at least five P-members** declare their commitment to participate actively in the project.
- Project leader responsible for the work item is appointed.



Stage 2: Preparatory stage

- Working group of experts, is set up by the TC/SC for the preparation of a working draft
Chairman (convener) is the project leader,
- Successive working drafts may be considered until the working group is satisfied that it has developed the best technical solution to the problem being addressed. At this stage, the draft is forwarded to the working group's parent committee for the consensus-building phase.



Stage 3: Committee stage

- As soon as a first committee draft is available, it is registered by the ISO Central Secretariat.
- It is distributed for comments and, if required, voting, by the P-members of the TC/SC.
- Successive committee drafts may be considered until consensus is reached on the technical content.
- Once consensus has been attained, the text is finalized for submission as a draft International Standard (DIS).



Stage 4: Enquiry stage

The draft International Standard (DIS) is circulated to all ISO member bodies by the ISO Central Secretariat for voting and comment within a period of five months.

- It is approved for submission as a final draft International Standard (FDIS) if a **two-thirds majority** of the P-members of the TC/SC are in favour and not more than one-quarter of the total number of votes cast are negative.
- If the approval criteria are not met, the text is returned to the originating TC/SC for further study and a revised document will again be circulated for voting and comment as a draft International Standard.



Stage 5: Approval stage

The final draft International Standard (FDIS) is circulated to all ISO member bodies by the ISO Central Secretariat for a final Yes/No vote within a period of two months.

- If technical comments are received during this period, they are no longer considered at this stage, but registered for consideration during a future revision of the International Standard.
- The text is approved as an International Standard if a **two-thirds majority of the P-members** of the TC/SC are in favour and not more than one-quarter of the total number of votes cast are negative. If these approval criteria are not met, the standard is referred back to the originating TC/SC for reconsideration in the light of the technical reasons submitted in support of the negative votes received.



Stage 6: Publication stage

- Once a final draft International Standard has been approved, only minor editorial changes, if and where necessary, are introduced into the final text. The final text is sent to the ISO Central Secretariat which publishes the International Standard.

Confirmation, Revision, Withdrawal of International Standards

- All International Standards are reviewed at least once every five years by the responsible TCs/SCs. A majority of the P-members of the TC/SC decides whether an International Standard should be confirmed, revised or withdrawn



Development of Kenya Standards - The Kenya National Standardization System

- A Standard is *a document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results*, aimed at the achievement of optimum degree of order in a given context.
- Kenya Standards are developed through **consensus** of opinion in line with ISO guidelines
- National (Kenya) standards can be grouped into 5 categories.
 - Product specifications
 - Codes of Practice
 - Glossary of Terms
 - Test Methods
 - Metrology (measurement) standards
- KEBS has facilitated the development of 4400 Kenya standards
- KEBS has participated in harmonizing over 600 East African Standards.



The National Standardization System

- A country's network of **people** and **organizations** involved in the **development, promotion and implementation of standards** through their **collaborative efforts**, thus, the country's **standards** help advance the social and economic well being of the country and safeguard the health and safety of its citizens



Who develops Kenya standards?

- Formulated by Technical Committees constituted by experts from:
 - Industry,
 - relevant Government Ministries,
 - Research Institutions
 - Institutions of higher learning e.g. universities,
 - Consumer organizations,
 - Non-Governmental Institutions
 - Professional Associations
 - KEBS as the secretariat.

Standards are therefore a result of consensus of opinions received from stakeholders.



The Process Stages

- Stage 1: Proposals for new work items, Prioritization of projects, Allocation of projects to the TC by ISC
- Stage 2: Discussion of draft standards by the TC
- Stage 3: Circulation and discussion of public review draft
- Stage 4: TC meeting for preparation of final draft standard and balloting
- Stage 5: Discussion of draft by Industry Standards Committee
- Stage 6: Approval of FDKS by the NSC and gazetted as a National Standard
- The Minister in charge of Trade and Industry issues a [legal notice](#) in the Kenya Gazette to render the standard(s) [mandatory](#).



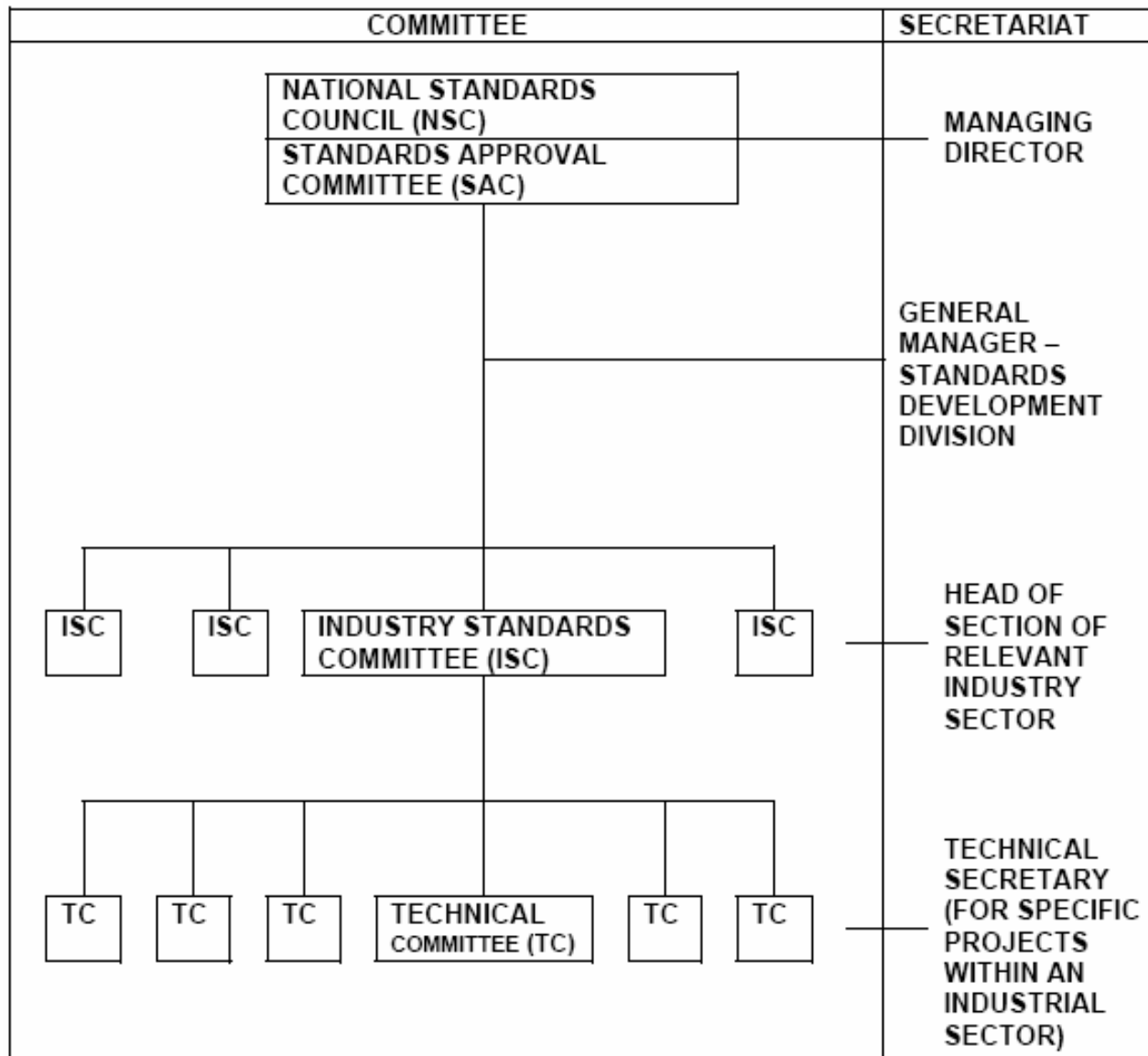


FIGURE 1 — STRUCTURE FOR DEVELOPMENT OF KENYA STANDARDS



Way Forward

- ISO Standards are very complex documents
- There's need to come up with standards acceptable by stakeholders & which can be used.
- The Current committee on standards will be converted to a TC on Geospatial standards.
- Programme of Work?

