


Technical Aspect of KNSDI

- What we'll implement? -



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GIS Standardization

What project will be doing?



⌘ Project will propose “draft standards for geo-spatial-information” based on KSISO19000

⌘ KSISO TC: technical committee (consist of users & data producers) will discuss & publish them

⌘ Project will use them for:

⊞ Improvement of data production at SoK (Quality)

⊞ Clearinghouse (Metadata)

⊞ Open KNSDI profile to public (Product specification)

Outline



- ⌘ Questions...
- ⌘ Current status of geo-spatial-information in kenya
- ⌘ What's standards?
- ⌘ Standards build on other standards (ISO & KSISO19000)
- ⌘ KSISO19000 series (We could start from here)
- ⌘ What's non-realistic? What's realistic?
- ⌘ 3 steps in standardization
- ⌘ Targets of discuss
- ⌘ What we'll implement?
- ⌘ The implementation will lead other actions
- ⌘ Questions... & answers
- ⌘ How KNSDI relate with KSISO19000?



Questions...

- ⌘ Do you really have to digitize road from 1:25K for example? It might be done by someone...
- ⌘ But, how can you find availability what you need? Probably you know some but not all...
- ⌘ And, if you could find the data, how can you evaluate suitability (contents, scale, accuracy, coordinate system...)? Probably you can't evaluate until you buy and open them...

Current status of geo-spatial-information in Kenya (in brief)

⌘ Many data exist

- ☑ Many... but individually created or used
- ☑ Probably many duplication
- ☑ Fundamental data (KNSDI) are not available

⌘ KSISO (The adoption of ISO19000 series)

- ☑ Already published, but not used yet
- ☑ Obstacles? maybe too conceptual, maybe software are not ready, don't feel necessity...

What's Standards?

⌘ Anything...

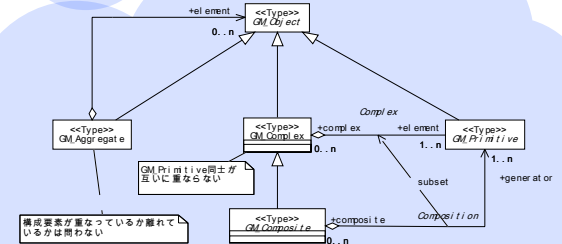
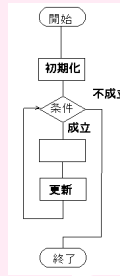
Suspicious

Well defined



Global

ABCDEF...



<http://www.sok.go.ke>
 $\sqrt{\quad}$, $+$, $=$, \int

⌘ But, industrial standards must be build on well defined standards only

Standards build on other standards (ISO19000 & KSISO19000 series)

Acquisition :
Quality Principles,
Quality evaluation
procedures,
Positioning services,
etc.

Management :
Metadata, ,
Methodology for
feature cataloging,
etc.

Interchange :
Service, Encoding,
Web map
server interface,
etc

Application :
Tracking
and navigation,
Portrayal,
etc

Spatial Information Model:

Spatial schema, Temporal schema, Rules for application schema,
Spatial referencing by coordinate etc.

Standards to support other standards :

Conformance and testing, Technical terms, Conceptual schema language, etc.

We don't have
discuss the
well define
standards

Well defined standards: Mathematic, Science, Language, etc.

KSISO19000 series (We could start from here)

⌘ KSISO19000 series

- ⏏ We already have national standards...
- ⏏ Extracted from ISO19000 Series
- ⏏ 16 of 32 are selected



- ⏏ Mostly covered
- ⏏ But actually not used yet
- ⏏ We could start discussion from here

Geographic information/Geomatics

↙ ISO 6709:1983	Standard representation of latitude, longitude and altitude for geographic point locations
↙ ISO 19101:2002	Geographic information -- Reference model
↙ ISO/TS 19103:2005	Geographic information -- Conceptual schema language
↙ ISO 19105:2000	Geographic information -- Conformance and testing
↙ ISO 19106:2004	Geographic information -- Profiles
↙ ISO 19107:2003	Geographic information -- Spatial schema
↙ ISO 19108:2002	Geographic information -- Temporal schema
↙ ISO 19108:2002/Cor 1:2006	
↙ ISO 19109:2005	Geographic information -- Rules for application schema
↙ ISO 19110:2005	Geographic information -- Methodology for feature cataloguing
↙ ISO 19111:2003	Geographic information -- Spatial referencing by coordinates
↙ ISO 19112:2003	Geographic information -- Spatial referencing by geographic identifiers
↙ ISO 19113:2002	Geographic information -- Quality principles
↙ ISO 19114:2003	Geographic information -- Quality evaluation procedures
↙ ISO 19114:2003/Cor 1:2005	
↙ ISO 19115:2003	Geographic information -- Metadata
↙ ISO 19115:2003/Cor 1:2006	
↙ ISO 19116:2004	Geographic information -- Positioning services
↙ ISO 19117:2005	Geographic information -- Portrayal
↙ ISO 19118:2005	Geographic information -- Encoding
↙ ISO 19119:2005	Geographic information -- Services
↙ ISO/TR 19120:2001	Geographic information -- Functional standards
↙ ISO/TR 19121:2000	Geographic information -- Imagery and gridded data
↙ ISO/TR 19122:2004	Geographic information / Geomatics -- Qualification and certification of personnel
↙ ISO 19123:2005	Geographic information -- Schema for coverage geometry and functions
↙ ISO 19125-1:2004	Geographic information -- Simple feature access -- Part 1: Common architecture
↙ ISO 19125-2:2004	Geographic information -- Simple feature access -- Part 2: SQL option
↙ ISO/TS 19127:2005	Geographic information -- Geodetic codes and parameters
↙ ISO 19128:2005	Geographic information -- Web map server interface
↙ ISO 19133:2005	Geographic information -- Location-based services -- Tracking and navigation
↙ ISO 19135:2005	Geographic information -- Procedures for item registration

What's non-realistic?

What's realistic here and today?

⌘ Non-realistic

- ☒ Adopt all ISO19000 series (or KSISO19000)
 - ☒ Adopt "encoding" means that establish new data format (based on XML), and development of brand new GIS software
 - ☒ Adopt "portrayal" means that development of brand new GIS software

⌘ Realistic

- ☒ On condition that use existing GIS software (Most of major packages)
- ☒ Brush up "part of" KSISO to be more practical
- ☒ Documentation "How to adopt KSISO19000" for both producer and user
- ☒ Try out of KSISO

⌘ As a consequence...

- ☒ Most of GIS software are still applicable
- ☒ Standards will be partly available (as minimum profile)
- ☒ Clearinghouse could be build
- ☒ Product specification documentation will be available

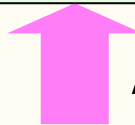
3 steps in standardization

Web map services,
Encoding,
Tracking and navigation,
Portrayal, etc.

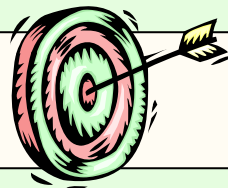
Reviewing application systems
> Improve business efficiency
> Improve quality of public services

Formulate fundamental dataset
> To utilize them, & avoid duplication

Rules for application
schema,
Spatial schema, etc.

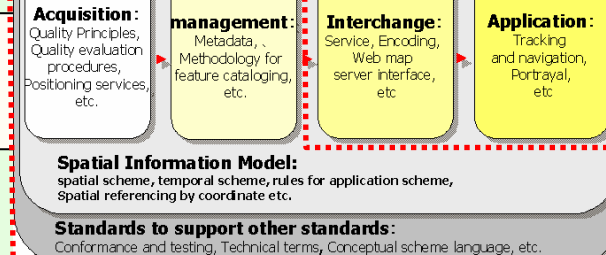


Focus



Discover data and evaluate frequency of use
> Search on clearinghouse

Metadata, Quality principles,
Quality evaluation procedures, etc.



Targets of discuss

⌘ Standards support other standards

- ☑ Unified Modeling Language (UML)

⌘ Spatial Information Model

- ☑ Spatial referencing by coordinate (ISO19111)

- ☑ Rules for application schema (ISO19109)

- ☑ Spatial schema (ISO19107 *partly adopted)

⌘ Acquisition

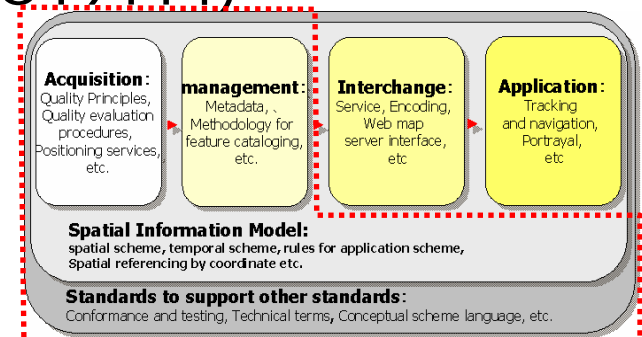
- ☑ Quality principles (ISO19113)

- ☑ Quality evaluation procedures (ISO19114)

- ☑ Product specification
(ISO19131 *Under development)

⌘ Management

- ☑ Metadata (ISO19115)



What we'll implement?

- ⌘ Survey: Currently existing dataset (Grasp needs on standards)

- ⌘ KSISO19000 series: As a minimum profile
 - ☒ Spatial referencing by coordinates =>for data intermix
 - ☒ Spatial schema, Rules for application schema =>for data interchange
 - ☒ Quality principles, Quality evaluate procedures =>for users & producers
 - ☒ Product specification (from ISO19000) =>for users
 - ☒ Metadata =>for clearinghouse

- ⌘ Guidebook: How to use KSISO19000
 - ☒ Both Users and data producers
 - ☒ Particularly, "Product specification", and "Metadata"

- ⌘ Survey: Actual proof test
 - ☒ 1:50,000 topographic map product specification documentation, metadata, sample dataset

The implementation will lead other actions

⌘ Establishment

of KNSDI product specification

- ☑ KNSDI committee already specified number of features as fundamental items in their resolution

⌘ Establishment of clearinghouse

⌘ Build WebGIS for open sample data



Questions... & answers



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How KNSDI relate with KSISO19000?

