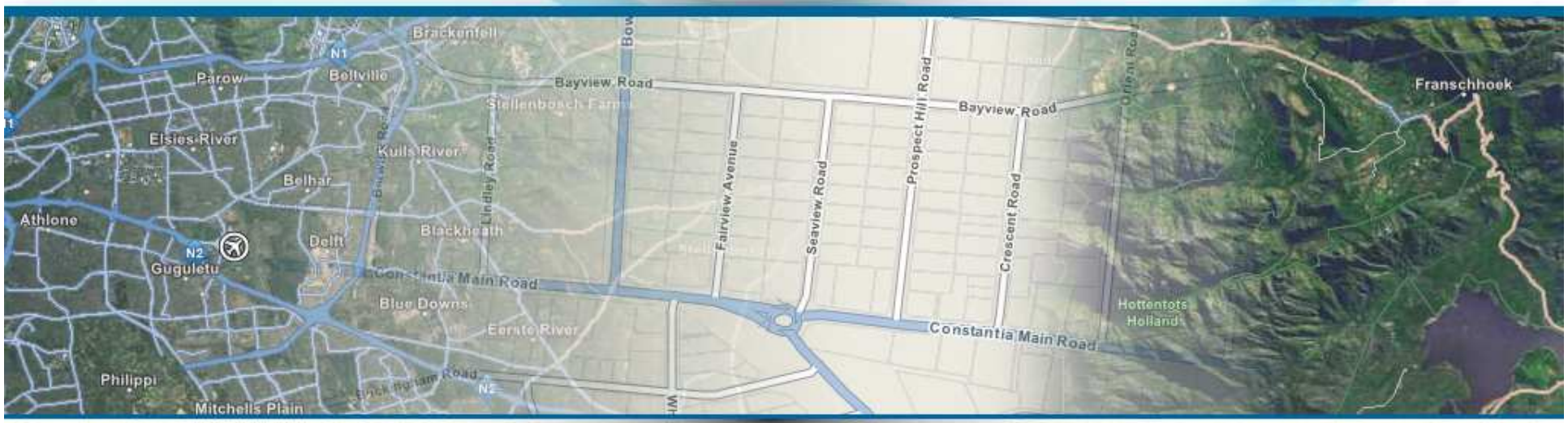
ISO/TC 211

LADM workshop, Delft, 16-17 March, 2017

Olaf Magnus Østensen



Intervention at UN-GGIM, Aug. 2016

Thank you, Mr Chair,

the International Standard on land administration – the ISO 19152

Land Administration Domain Model, is one of the success stories of ISO in the field of geospatial information. Initiated and led by FIG the development of this standard profited highly on the knowledge, experience and expertise of FIG and several other contributors. We are very pleased that this International Standard have found broad application and now underpins the Fit-for-Purpose approach in land administration and the Social Tenure Domain Model, the latter characterized as a specialization of ISO 19152.

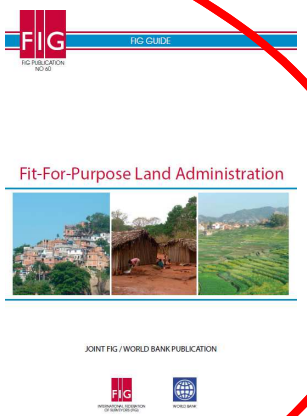
As this standard is now up for revision, ISO/TC 211 looks forward to collaborate with the Expert Group on Land Administration and Management, FIG, the World Bank, the OGC Domain Working Group on Land Administration, which all are liaison members of ISO/TC 211, or under the umbrella of a liaison member, and any other relevant organization to revise the standard to still. or even better, fit the requirements of both highly developed and less developed countries.

Thank you!

Advisory Group on Strategy meeting in Redlands, December 2016

- Proposal on GIS – BIM
  - prepared by ISO/TC 211 WG4 convenor and ISO/TC 59/SC 13 representative, Øyvind Rooth

- Revision of ISO 19152 LADM
  - invitation for a NWIP on revision?
  - the Dutch environment is very interested
  - World Bank a stakeholder
  - revision ideas: http://wiki.tudelft.nl/bin/view/Research/ISO19152/StandardMaintenance

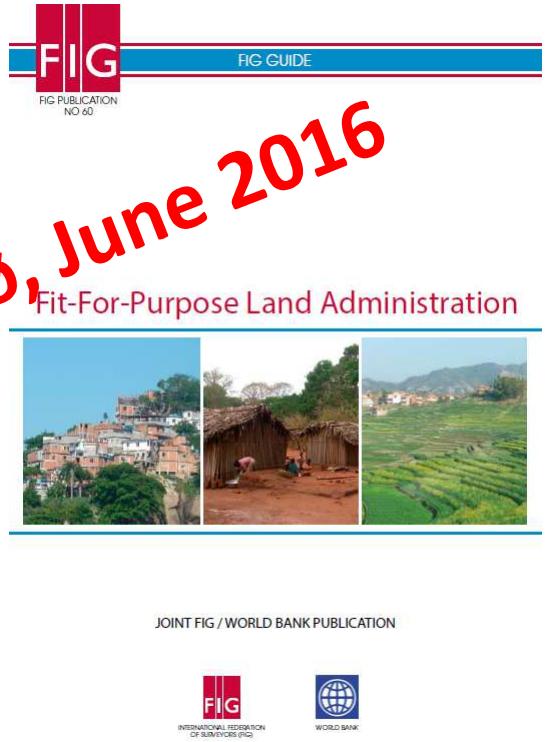


Land administration – ISO 19152 well recognized by UN and the World Bank for instance – we should build on this!

- Revision and possible extension?

ISO 19152:2012
Geographic information -- Land Administration Domain Model (LADM)

Abstract
ISO 19152:2012:
defines a reference Land Administration Domain Model (LADM) covering basic information-related components of land administration (including those over water and land, and elements above and below the surface of the earth);
provides an abstract, conceptual model with four packages related to parties (people and organizations); basic administrative units, rights, responsibilities, and restrictions (ownership rights); spatial units (parcels, and the legal space of buildings and utility networks); spatial sources (surveying), and spatial representations (geometry and topology);
provides terminology for land administration, based on various national and international systems, that is as simple as possible in order to be useful in practice. The terminology allows a shared description of different formal or informal practices and procedures in various jurisdictions;
provides a basis for national and regional profiles; and
enables the combining of land administration information from different sources in a coherent manner.

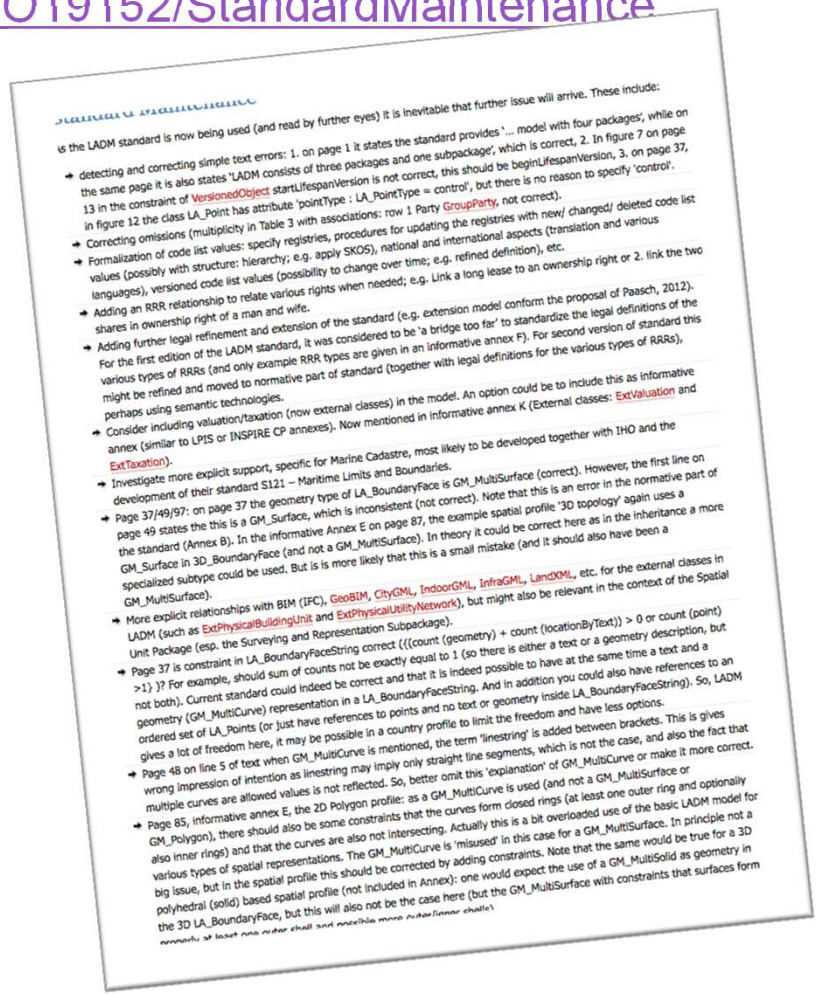


ISO TC 211 meeting in Tromsø, June 2016

What should be considered?

- Peter Van Oosterom's web-site: http://wiki.tudelft.nl/bin/view/Research/ISO19152/StandardMaintenance

- A long list of corrections, possible extensions and other suggestions

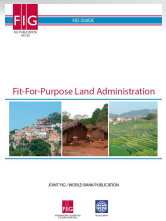


Standard Maintenance

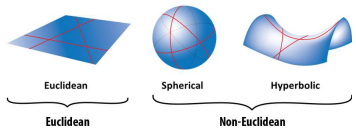
is the LADM standard is now being used (and read by further eyes) it is inevitable that further issue will arrive. These include:

- detecting and correcting simple text errors: 1. on page 1 it states the standard provides '... model with four packages', while on the same page it is also states "LADM consists of three packages and one subpackage', which is correct, 2. In figure 7 on page 13 in the constraint of VersionedObject startLifespanVersion is not correct, this should be beginLifespanVersion, 3. on page 37, in figure 12 the class LA_Point has attribute 'pointType : LA_PointType = control', but there is no reason to specify 'control'.
- Correcting omissions (multiplicity in Table 3 with associations: row 1 Party GroupParty, not correct).
- Formalization of code list values: specify registries, procedures for updating the registries with new/ changed/ deleted code list values (possibly with structure: hierarchy; e.g. apply SKOS), national and international aspects (translation and various languages), versioned code list values (possibility to change over time; e.g. refined definition), etc.
- Adding an RRR relationship to relate various rights when needed; e.g. Link a long lease to an ownership right or 2. link the two shares in ownership right of a man and wife.
- Adding further legal refinement and extension of the standard (e.g. extension model conform the proposal of Paasch, 2012). For the first edition of the LADM standard, it was considered to be 'a bridge too far' to standardize the legal definitions of the various types of RRRs (and only example RRR types are given in an informative annex F). For second version of standard this might be refined and moved to normative part of standard (together with legal definitions for the various types of RRRs), perhaps using semantic technologies.
- Consider including valuation/taxation (now external classes) in the model. An option could be to include this as informative annex (similar to LPIS or INSPIRE CP annexes). Now mentioned in informative annex K (External classes: ExtValuation and ExtTaxation).
- Investigate more explicit support, specific for Marine Cadastre, most likely to be developed together with IHO and the development of their standard S121 – Maritime Limits and Boundaries.
- Page 37/49/97: on page 37 the geometry type of LA_BoundaryFace is GM_MultiSurface (correct). However, the first line on page 49 states the this is a GM_Surface, which is inconsistent (not correct). Note that this is an error in the normative part of the standard (Annex B). In the informative Annex E on page 87, the example spatial profile '3D topology' again uses a GM_Surface in 3D_BoundaryFace (and not a GM_MultiSurface). In theory it could be correct here as in the inheritance a more specialized subtype could be used. But is is more likely that this is a small mistake (and it should also have been a GM_MultiSurface).
- More explicit relationships with BIM (IFC), GeoBIM, CityGML, IndoorGML, InfraGML, LandXML, etc. for the external classes in LADM (such as ExtPhysicalBuildingUnit and ExtPhysicalUtilityNetwork), but might also be relevant in the context of the Spatial Unit Package (esp. the Surveying and Representation Subpackage).
- Page 37 is constraint in LA_BoundaryFaceString correct ({{{count (geometry) + count (locationByText)) > 0 or count (point) >1})? For example, should sum of counts not be exactly equal to 1 (so there is either a text or a geometry description, but not both). Current standard could indeed be correct and that it is indeed possible to have at the same time a text and a geometry (GM_MultiCurve) representation in a LA_BoundaryFaceString. And in addition you could also have references to an ordered set of LA_Points (or just have references to points and no text or geometry inside LA_BoundaryFaceString). So, LADM gives a lot of freedom here, it may be possible in a country profile to limit the freedom and have less options.
- Page 48 on line 5 of text when GM_MultiCurve is mentioned, the term 'linestring' is added between brackets. This is gives wrong impression of intention as linestring may imply only straight line segments, which is not the case, and also the fact that multiple curves are allowed values is not reflected. So, better omit this 'explanation' of GM_MultiCurve or make it more correct.
- Page 85, informative annex E, the 2D Polygon profile: as a GM_MultiCurve is used (and not a GM_MultiSurface or GM_Polygon), there should also be some constraints that the curves form closed rings (at least one outer ring and optionally also inner rings) and that the curves are also not intersecting. Actually this is a bit overloaded use of the basic LADM model for various types of spatial representations. The GM_MultiCurve is 'misused' in this case for a GM_MultiSurface. In principle not a big issue, but in the spatial profiles this should be corrected by adding constraints. Note that the same would be true for a 3D polyhedral (solid) based spatial profile (not included in Annex): one would expect the use of a GM_MultiSolid as geometry in the 3D LA_BoundaryFace, but this will also not be the case here (but the GM_MultiSurface with constraints that surfaces form

Some personal views …

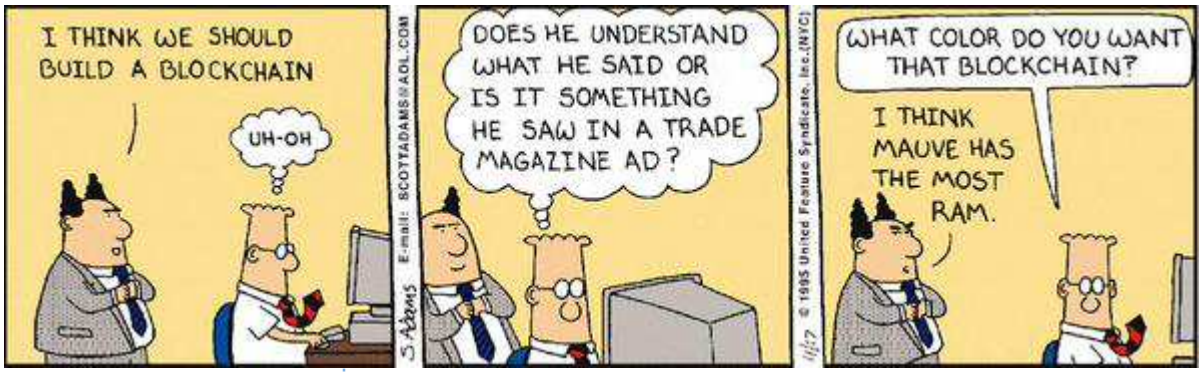


- Added support for the Fit-For-Purpose approach?
- Support for the SDGs – goals and target
- Profiling
  - More value for advanced use
  - Profiles better suited for developing countries at different levels
- Support for Marine cadastre
- Take into account other revised ISO standards that ISO 19152 builds on
  - Especially ISO 19107 Spatial schema
- Consider the connection to other domains, especially BIM
  - ISO/TC 211 and ISO/TC 59/SC13 will probably form a JointWG on the integration of GIS and BIM
  - OGC and BuildingSMART will take part



Further …

- How to derive an application schema from the ‘meta’model?
- Issue of register for profiles?
- Encodings – XML-GML, JSON, RDF, ….
- What about registers themselves?
  - New technologies like blockchain for registers in countries with less infrastructure, less trust in authorities, or simply lack of authorities to manage the roles
  - A liaison between ISO/TC 211 and ISO/TC 307 is proposed

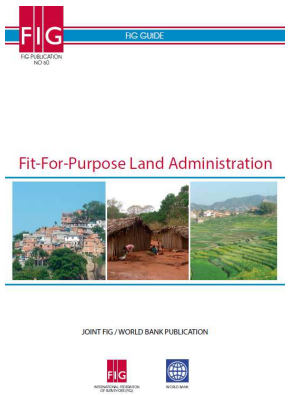


But …

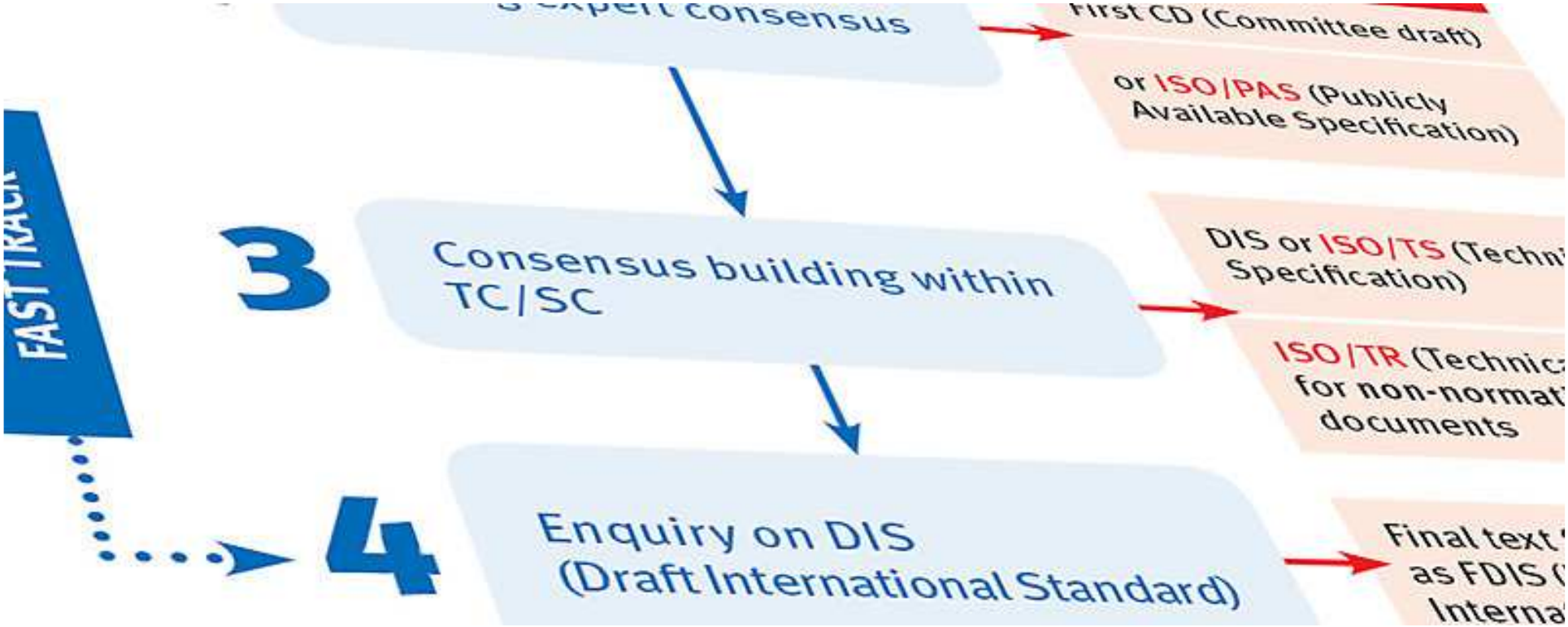
Proposals and ideas are virtually endless, but

most important

add value in a reasonable timeframe!



The standards process



Before you start …

- Consider and plan the structure of the work
- What do you want?
  - A minor revision?
  - A comprehensive revision?

- If you foresee a comprehensive revision, the structure is very importan and should be carefully planned!

The options

- A multipart standard
  - ISO 19152 - Part 1 Fundamental concepts (just an example!!)
  - ISO 19152 – Part 2: Core model (just an example!!)
  - Etc.
- Using conformance classes
  - Conformance class x: Two dimensional model (just an example!!)
  - Conformance class y: 3D model (just an example!!)
  - Conformance class z: …..
- Using annexes to describe different cases
- Defining profiles, perhaps in normative annexes
- Combination of everything!

- The purpose must be to make it clear and overviewable, not complicate
- User perspective is the importan one

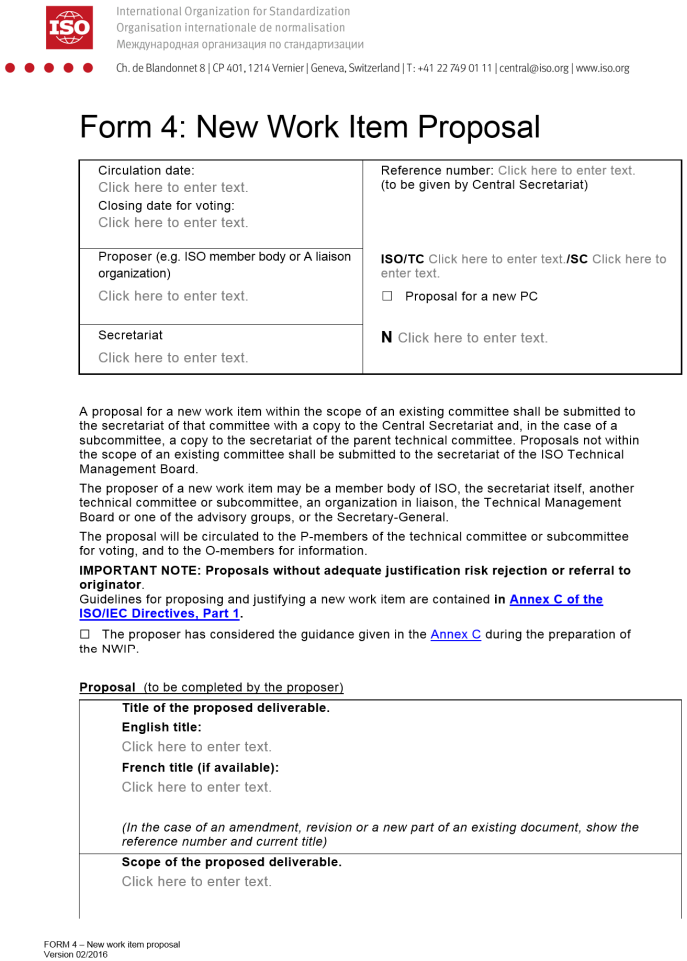
The revision process – stage 1 NWIP

- New Work Item Proposal (NWIP) for the revision work
- 3 months ballot
  (could be reduced to 2 months by resolution)

- Approved by simple majority among P-members and if 5, or more, participants

Need:

- **A proposer**
  - ISO member body
  - Category A liaison member
- **A project leader**
  - Optional an editor



International Organization for Standardization
Organisation internationale de normalisation
Международная организация по стандартизации

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Form 4: New Work Item Proposal

Circulation date: Click here to enter text. Closing date for voting: Click here to enter text.	Reference number: Click here to enter text. (to be given by Central Secretariat)
Proposer (e.g. ISO member body or A liaison organization) Click here to enter text.	**ISO/TC** Click here to enter text./**SC** Click here to enter text. ☐ Proposal for a new PC
Secretariat Click here to enter text.	**N** Click here to enter text.

A proposal for a new work item within the scope of an existing committee shall be submitted to the secretariat of that committee with a copy to the Central Secretariat and, in the case of a subcommittee, a copy to the secretariat of the parent technical committee. Proposals not within the scope of an existing committee shall be submitted to the secretariat of the ISO Technical Management Board.

The proposer of a new work item may be a member body of ISO, the secretariat itself, another technical committee or subcommittee, an organization in liaison, the Technical Management Board or one of the advisory groups, or the Secretary-General.

The proposal will be circulated to the P-members of the technical committee or subcommittee for voting, and to the O-members for information.

IMPORTANT NOTE: Proposals without adequate justification risk rejection or referral to originator.
Guidelines for proposing and justifying a new work item are contained **in Annex C of the ISO/IEC Directives, Part 1.**

☐ The proposer has considered the guidance given in the Annex C during the preparation of the NWIP.

Proposal (to be completed by the proposer)

Title of the proposed deliverable. **English title:** Click here to enter text. **French title (if available):** Click here to enter text. *(In the case of an amendment, revision or a new part of an existing document, show the reference number and current title)*
Scope of the proposed deliverable. Click here to enter text.

FORM 4 – New work item proposal
Version 02/2016

Administration of the process

- Original proposer was FIG
- Original project leader Christiaan Lemmen, editor added somewhat later, Harry Uitermark

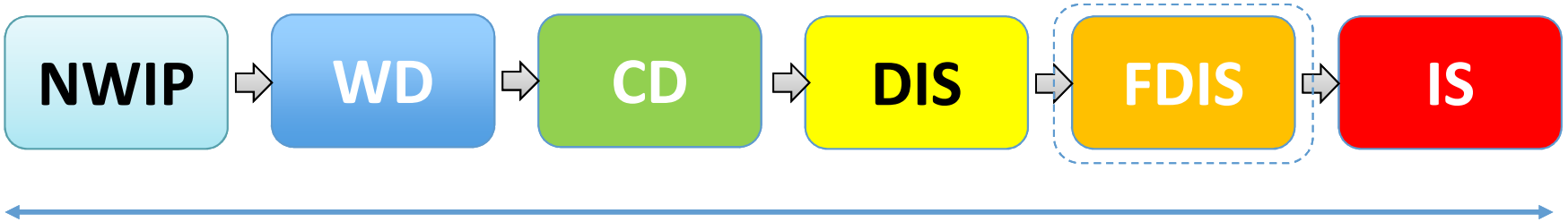
- New proposer
  - A member body
    - Netherlands?
  - The Secretariat
  - A liaison member
    - FIG, World Bank, OGC, ….
  - *The proposer should at least morally ensure the completion of the task*
- New project leader?
  - Funding is essential

The NWIP should contain

- A draft or, at lest, an outline of the new version
- It should also be stated whether the NWIP should enter the process at
  - Project team/WG stage (WD attached)
  - Committee stage (CD attached), in this case a quite formal process starts
  - Enquiry stage (DIS attached), then a complete and final document need to be attached

- In the case of LADM, I assume a WD at project team/WG is the relevant option
- Three possible target dates:
  - Accelerated standards development track — 24 months to publication
  - Default standards development track — 36 months to publication
  - Enlarged standards development track — 48 months to publication

The development chain



- ISO centrally is enforcing a very strict time schedule management
- Time-to-market being more and more important for standards

I wish you …