



Feedback from the meeting in Busan

**ISO 19160-1, Addressing – Conceptual model**

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ISO International Organization for Standardization

## Agenda

- Progress to date (slide 3)
  - Teleconferences
  - Current working draft
- Open issues (slide 17)
- Response to comments received on the working draft (slide 37)
- 2013 Schedule (slide 40)
- Profile issues (slide 42)
  - AU, NZ, KR, INSPIRE, general
- Issues resolved by the HMMG (slide 62)

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## Progress to date

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## Progress to date

- Teleconferences
  - Once a month in Jan, Feb, Mar, Apr
    - Western part: Wednesday 14:30 GMT
    - Eastern part: Thursday 7:30 GMT
  - Some countries contribute asynchronously, e.g. Korea, Japan
  - Comments? Suggestions?

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## Current working draft

1. Scope
2. Conformance
3. Normative reference
4. Terms and definitions
5. Symbols and abbreviations
6. Address model
7. Requirements class: Core
8. Requirements class: Lifecycle
9. Requirements class: Provenance
10. Requirements class: Locale

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## Current working draft

Annex A (normative) Abstract test suites  
Annex B (informative) Profiles and instance data  
Annex C (informative) Examples: Lifecycle of an address, address component and addressable object  
Annex D (informative) Examples: Address component alternatives and address aliases  
Annex E (informative) Examples: ReferenceObject in a profile  
Bibliography

Remove Annex E? Keep in and decide when profiles are finalized (July 2013)

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## Conformance classes

- Core
- Lifecycle
- Provenance
- Locale
- Full (Core + Lifecycle + Provenance + Locale)

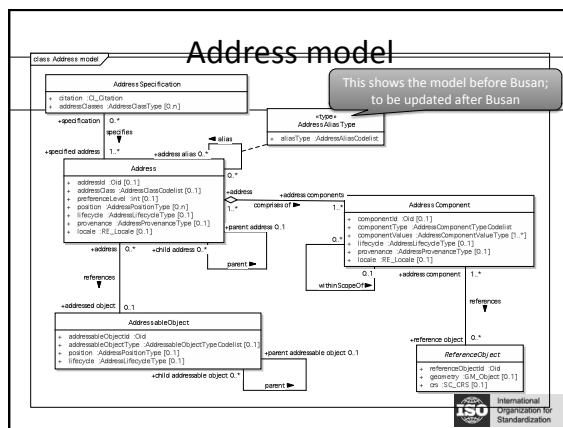


## Terms and definitions

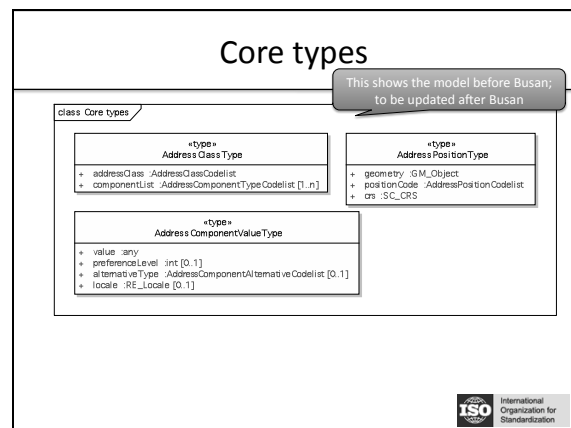
|                    |                           |
|--------------------|---------------------------|
| address            | address reference system  |
| addressable object | child address             |
| addressee          | child addressable object  |
| address alias      | locale                    |
| address class      | parent address            |
| address component  | parent addressable object |
| address position   | spatial object            |



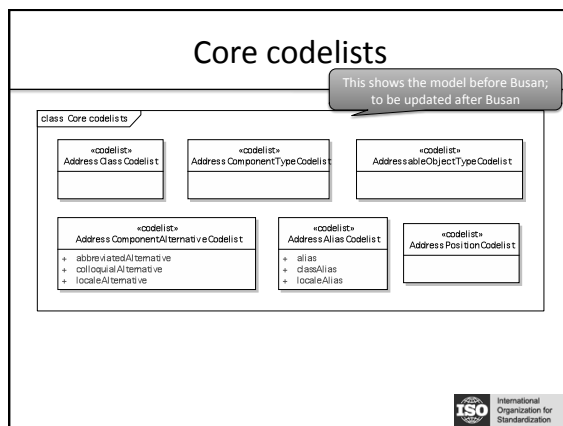
## Address model



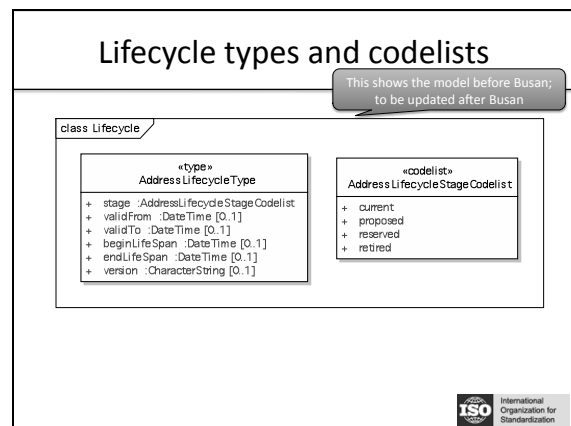
## Core types



## Core codelists



## Lifecycle types and codelists



## Provenance type

This shows the model before Busan;  
to be updated after Busan

class Provenance

«type»  
Address ProvenanceType

+ authority :CI\_Organisation  
+ owner :CI\_Organisation [0..1]  
+ lineage :LI\_Lineage [0..\*]



## Current working draft

### • Profiles

1. Australia
2. Cultural heritage information:???
3. INSPIRE
4. Japan
5. New Zealand
6. South Africa
7. South Korea
8. UK
9. UPU
10. US FGDC

Next version of drafts to  
be included in the  
committee draft (CD) -  
July 2013



## Current working draft: status of profiles

|          | Address<br>classes | Address<br>components | Matrix:<br>class/<br>components | Data type<br>for<br>component | Attribute<br>mapping | Instance<br>data |
|----------|--------------------|-----------------------|---------------------------------|-------------------------------|----------------------|------------------|
| Minimal  | X                  | ✓                     | X                               | ✓                             | -                    | ✓                |
| AU       | ✓                  | ✓                     | ✓                               | ✓                             | ✓                    | ✓                |
| Cultural | X                  | X                     | X                               | X                             | X                    | X                |
| INSPIRE  | X                  | ✓                     | X                               | ✓                             | ✓                    | X                |
| JP       | ✓                  | ✓                     | X                               | X                             | n/a                  | X                |
| NZ       | ✓                  | ✓                     | X                               | X                             | X                    | ✓                |
| ZA       | ✓                  | ✓                     | ✓                               | ✓                             | ✓                    | ✓                |
| KR       | ✓                  | ✓                     | X                               | ✓                             | X                    | ✓                |
| UK       | X                  | ✓                     | X                               | X                             | X                    | X                |
| UPU      | ✓                  | ✓                     | n/a                             | X                             | n/a                  | ✓                |
| US       | ✓                  | ✓                     | ✓                               | X                             | ✓                    | X                |



## How to build a profile...

Keep B.1?  
Yes

1. Decide on the conformance level
2. Identify the classes to be included:
  - Address, AddressComponent shall be included
3. Identify associations to be included:
4. Specify codelist values
  - AddressClassCodelist, AddressComponentTypeCodelist shall be included
  - AddressComponent.componentValue.value: specify type for each address component type
  - Matrix: indicate which component set for each address class
5. Identify attributes to be included
6. Specify mapping for each attribute
  - Profile to standard/specification
  - Standard/specification to profile
7. Instance data (examples) to verify the profile



## Open issues



## Open issues

- Codelists
  - Are there any codelist elements that are common to all profiles?
  - HMMG feedback: How to represent codelist values in the profiles
  - HMMG feedback: names of types and codelists
  - HMMG feedback: codelist vs enumeration
- Attributes
  - Remove crs attributes in ReferenceObject and AddressPositionType?
  - Add referenceObjectType attribute to ReferenceObject? Class
  - Remove locale attribute from the Address class?
- Indicate hierarchical order of components in profiles?
- Instance diagrams
- Introduction – revise paragraph
- Other?



## Open issues

Codelist elements  
common to all profiles?

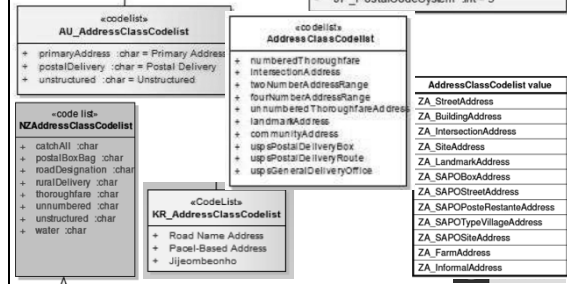


## AddressClassCodelist

Not enough  
commonality for a  
base codelist

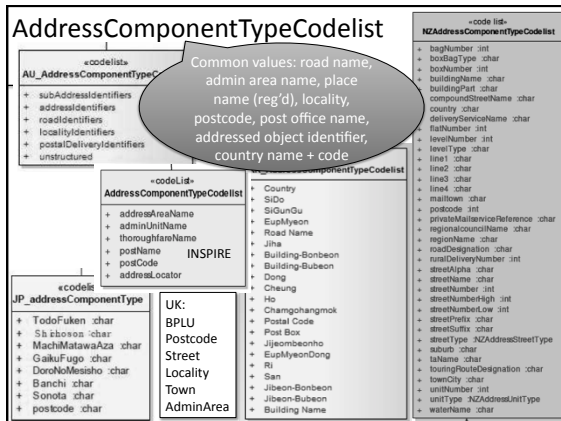
JP\_AddressClassType  
- JukyohyojAddress\_GakuSystem int= 1  
- RealPropertyAddress\_BanchiSystem int= 2  
- JP\_PostalCodeSystem int= 3

- Not yet specified: INSPIRE, UK, UPU

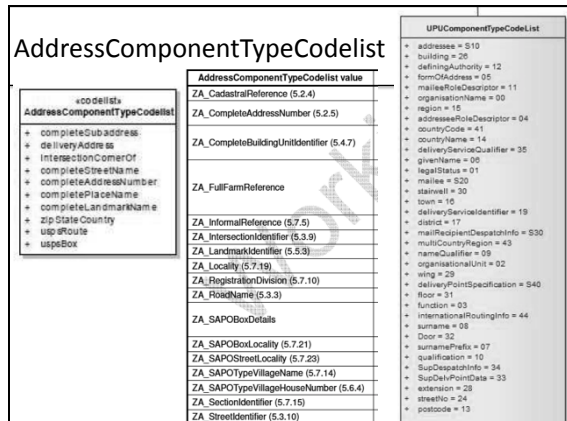


## AddressComponentTypeCodelist

Common values: road name,  
admin area name, place  
name (reg'd), locality,  
postcode, post office name,  
addressed object identifier,  
country name + code



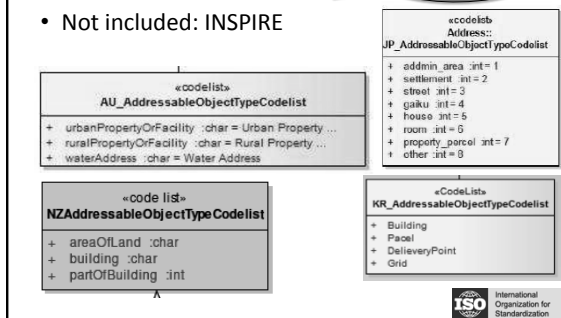
## AddressComponentTypeCodelist



## AddressableObjectCodelist

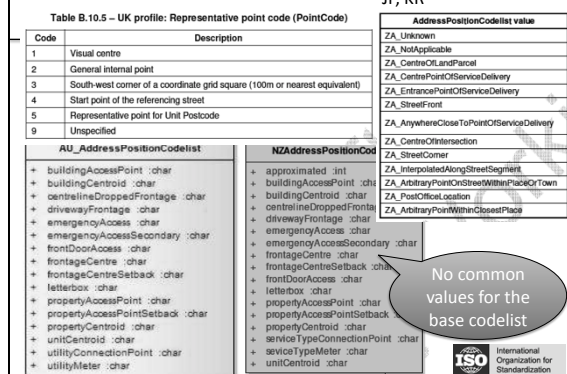
No common  
values for the base  
codelist

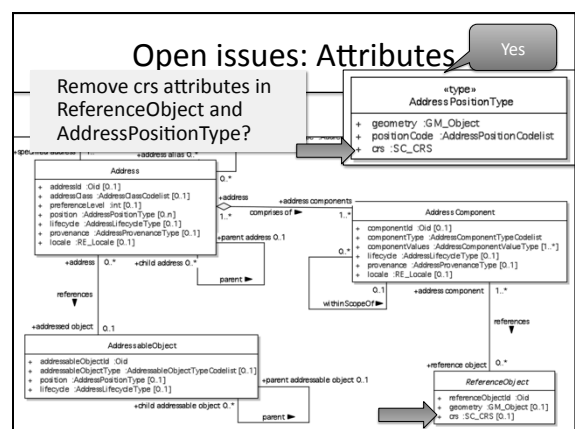
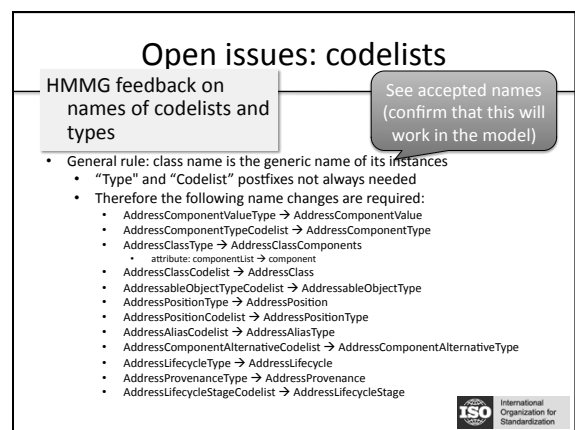
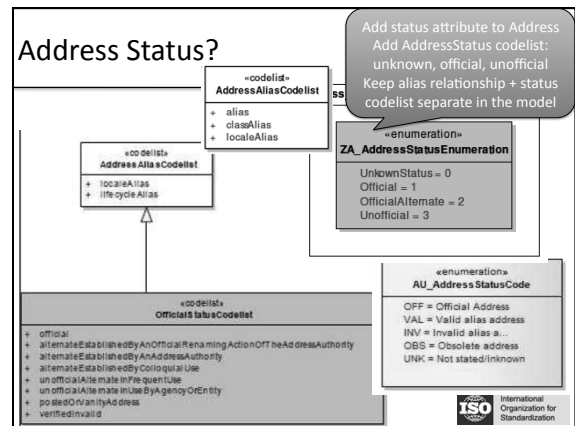
- Not included: INSPIRE



## AddressPositionCodelist

- Not included: INSPIRE, JP, KR





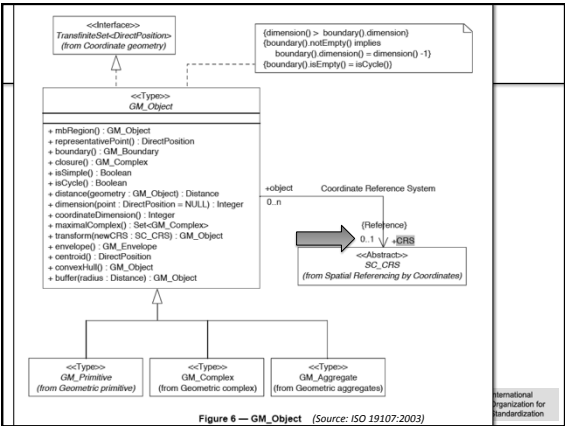
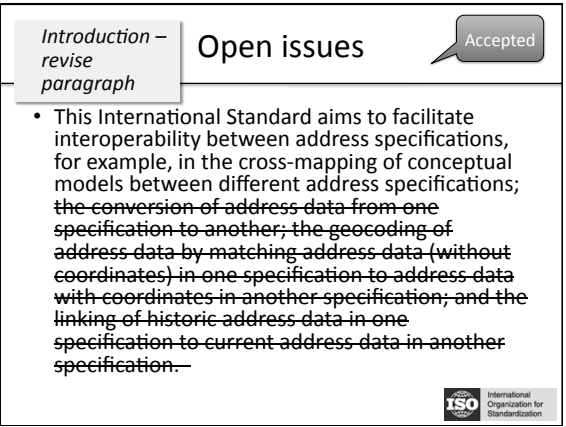
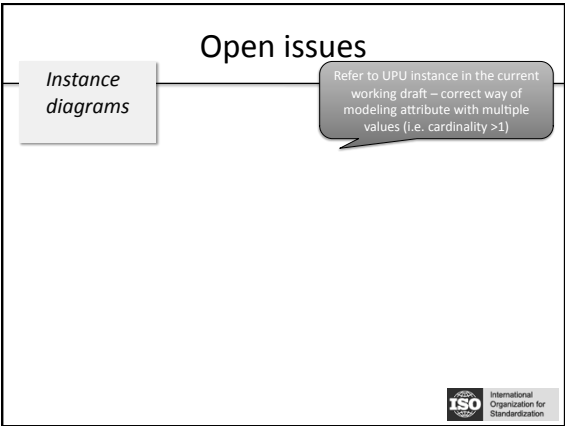
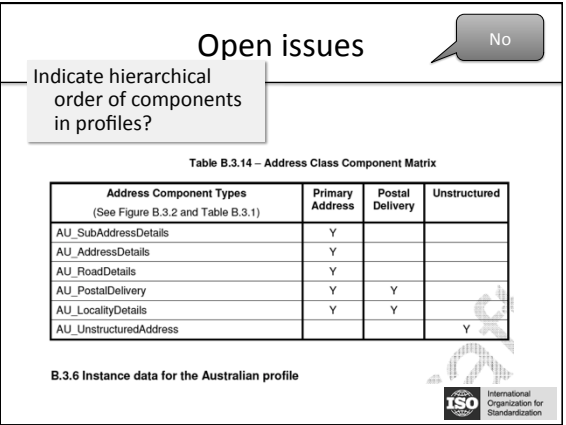
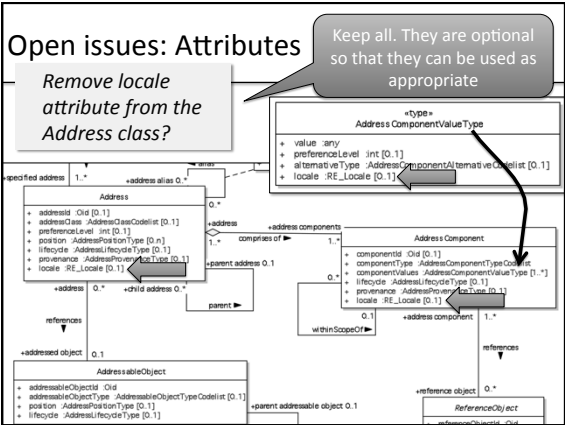
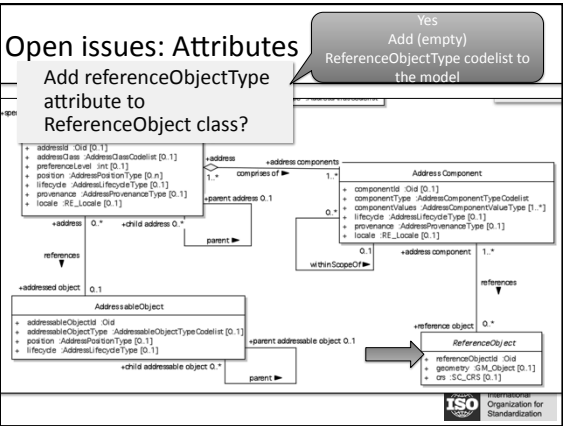


Figure 6 — GM\_Object (Source: ISO 19107:2003)



## Response: Comments on ISO/WD 19160-1



## Response: Comments on ISO/WD 19160-1

- AU8/AU9/AU11
  - Confirm with HMMG: int or Integer? Integer
- CN1
  - Don't understand comment, follow up with China. CN is concerned over empty cultural heritage profile (B.4). Accepted. Will not be included in the committee draft if it is still empty by then.
- ES1
  - Each profile to include textual description of the diagram. Accepted in principle. Limit the text to a description of deviations from address model. Max 500 words.
- ES2
  - Remove definitions for addressable object, address class, address position, child addressable object, parent addressable object. Not accepted. The definitions are needed to understand the model. These definitions do not appear in a dictionary.
- ES2
  - Add definition for provenance (*description of the source citation and lineage of a resource*). Accepted.



## Response: Comments on ISO/WD 19160-1

- ES4-ES7
  - Common codelist values. Accepted/Not accepted...see earlier slides.
- ES8
  - Add Locator attribute to the AddressComponent class. Not accepted? To be resolved at INSPIRE teleconference on 5 June.



## 2013 Schedule



## 2013 Schedule

- Times
  - Wednesday 14:30 GMT
  - Thursday 7:30 GMT
- Teleconferences
  - 5 June 2013 (INSPIRE only)
  - 12/13 June 2013
  - 10/11 July 2013
- Committee draft
  - Submission: 22 July
  - Comments deadline: 22 October 2013
  - Editing Committee to address comments: 11-12 November 2013 (Redlands)
- Draft international standard
  - Submission: February 2014 (modified and accepted by the plenary)

Member bodies have to nominate experts for the editing committee.



## Communication

- Livelink dropbox for sharing files
  - To be established
  - Make sure project team members know how to find it
  - Short term: 'real' dropbox, if required
- Bjornhild: number of pages an issue?
  - To do (Serena)



## Profile issues



## Monday afternoon

- 13:30 – 14:10
  - Presentations
    - Australia profile
    - Korean profile
    - New Zealand profile
    - South African profile
- 14:00 - 15:00
  - Discussion: AU profile, NZ profile
- 15:00 – 15:30
  - Tea break
- 15:30 – 17:00
  - Discussion: Korean profile



## Australia: Features and Issues (1)

- The profile adopts many of the ISO 19160-1 classes and attributes without supplementation.
  - An additional class has been included to accommodate additional attributes from AS 4590:2006.
- ISO 19160-1 includes optional attributes for address lifecycle, provenance and locale.
  - AS 4590:2006 is not conformant with these attributes.
  - They have been flagged as out-of-scope in the cross-mapping.
- The attributes in section 5 of AS 4590:2006 have been clustered into six address component types.
  - Assists with attribute management.



## Australia: Features and Issues (2)

- The codelists and enumerations have been extracted from both AS 4590:2006 and AS/NZS 4819:2011.
  - The enumeration AU\_RoadType has been derived from codelists in AS 4590:2006, AS 4590:2006 GovDex Model V2.0, and AS/NZS 4819:2011.
  - AddressSpecification - Values in AU\_AddressClassCodelist have been deduced from the text of AS 4590:2006. There is no specific list in that standard.
  - AddressableObject - Values in AU\_AddressClassCodelist have been deduced from the texts of AS 4590:2006 and AS/NZS 4819. There are no specific lists in those standard.



## Australia: Features and Issues (3)

- The mapping of position (geocode) data to the ISO 19107:2003 class 'GM\_Object' is currently very vague.
  - An issue for all national profiles?
- Representations of codelists and enumerations using Enterprise Architect.
- Representation of attributes in the profile instance diagrams.



## New Zealand: Issues

- Interfaces with other domains
  - Internal issue
- Access Points
  - No need in ISO general model
- Locale
  - Internal issue
- Lifecycle
  - lifecycle is not an alias
- Provenance type names
  - Added additional types
- Mapping to Current Standards
  - Restrict to a mapping from/to AS/NZ4819
- Modelling issue
  - Consult the HMMG



## Korean profile: Issues

- Comments on the address model in the current working draft
  - AddressPositionType
    - Change geometry attribute to be mandatory, positionCode to be optional
  - Addressable object examples
    - Include parcel as an example
  - AddressComponent
    - Attribute should be in singular: change componentValues to componentValue



| Component name      | KR_RoadName<br>Address | KR_ParcelBased<br>Address | KR_Jijeombeonho | KR_POBox |
|---------------------|------------------------|---------------------------|-----------------|----------|
| KR_Country          | Y                      | Y                         | Y               | Y        |
| KR_SiDo             | Y                      | Y                         |                 | Y        |
| KR_SiGunGu          | Y                      | Y                         |                 | Y        |
| KR_EupMyeon         | Y                      |                           |                 | Y        |
| KR_RoadName         | Y                      |                           |                 |          |
| KR_Jiha             | Y                      |                           |                 |          |
| KR_Building-Bonbeon | Y                      |                           |                 |          |
| KR_Building-Bubeon  | Y                      |                           |                 |          |
| KR_Dong             | Y                      | Y                         |                 |          |
| KR_Cheung           | Y                      | Y                         |                 |          |
| KR_Ho               | Y                      | Y                         |                 |          |
| KR_Changohangmok    | Y                      |                           |                 |          |
| KR_PostalCode       | Y                      | Y                         |                 | Y        |
| KR_POBox            |                        |                           |                 | Y        |
| KR_Jijeombeonho     |                        |                           | Y               |          |
| KR_EupMyeonDong     |                        | Y                         |                 |          |
| KR_Ri               |                        | Y                         |                 |          |
| KR_San              |                        | Y                         |                 |          |
| KR_Jibeon-Bonbeon   |                        | Y                         |                 |          |
| KR_Jibeon-Bubeon    |                        | Y                         |                 |          |
| KR_BuildingName     |                        | Y                         |                 |          |

## Korean profile: Issues

| Component name      | English component name/term                                                                 |
|---------------------|---------------------------------------------------------------------------------------------|
| KR_Country          | country                                                                                     |
| KR_SiDo             | Si=1st level admin region:city with status of province, Do=1st level admin region: province |
| KR_SiGunGu          | Gun=rural 2nd level admin region                                                            |
| KR_EupMyeon         | Town=4th level admin region                                                                 |
| KR_RoadName         | road name                                                                                   |
| KR_Jiha             | Basement                                                                                    |
| KR_Building-Bonbeon | 1st level Building identifier                                                               |
| KR_Building-Bubeon  | 2nd level building identifier                                                               |
| KR_Dong             | Wing or section of a building                                                               |
| KR_Cheung           | Floor                                                                                       |



## Korean profile: Issues

| Component name    | English component name/term                    |
|-------------------|------------------------------------------------|
| KR_Ho             | Door                                           |
| KR_Changohangmok  | EupMyeonDong + building name                   |
| KR_PostalCode     | postal code                                    |
| KR_POBox          | PO Box                                         |
| KR_Jijeombeonho   | grid identifier/code (2 characters + 8 digits) |
| KR_EupMyeonDong   | 5th level admin region                         |
| KR_Ri             | Village                                        |
| KR_San            | Mountain                                       |
| KR_Jibeon-Bonbeon | 1st level building identifier in land parcels  |
| KR_Jibeon-Bubeon  | 2nd level building identifier in land parcels  |
| KR_BuildingName   | building name                                  |



## Tuesday morning

### Before lunch

- 9:00-9:30
  - UPU profile
- 9:30 – 10:30
  - Japan profile
- 10:30 – 11:00
  - Tea break
- 11:00 – 11:30
  - UK profile
- 11:30 – 12:30
  - INSPIRE

### After lunch

- 13:30-14:30
  - ISO 19160-4
- 15:00-15:30
  - Tea break
- 15:30 – 17:00
  - HMMG



## Japan profile

- See presentation



## UK profile

- See presentation



## INSPIRE profile: list of issues

- Knut's comments
  - AddressLocator in the model
  - Typos in the model
  - Designator + name combined?
- alternativeIdentifier in Address Component?
  - Rather use componentValue
- Map level in INSPIRE to address class code in ISO 19160-1
  - site, access unit, postal delivery
- Include AddressableObject
  - Relation to building, cadastral parcels
- Map status in INSPIRE to lifecycle.stage
  - How to map status.alternative?
- ES8
  - Add Locator attribute to the AddressComponent class. Not accepted? To be resolved at INSPIRE teleconference on 5 June.

Teleconference  
on INSPIRE  
profile: 5 June

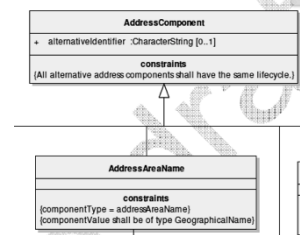


## General profile issues



## How to model AddressComponents

- Use constraints rather than notes
- Preferred modelling of AddressComponents



## Matrix vs constraint

- Add constraint on the association between Address and AddressComponent in the ISO 19160-1 address model
  - Constraint text:
    - the matrix in the profile specifies which components are valid for which address class code



## Oid from 19152:2012

- There is no GML implementation for Oid
  - MD\_Identifier?
  - Identifier from ISO 19155?
  - Other type of identifier?
  - Define our own identifier?
  - Keep Oid for now



## Other

- Add contact information for each profile
  - This should be the authority or standards body
  - Because profiles might evolve after publication of the standard



## Issues resolved by the HMMG



## Issues resolved by the HMMG

To be implemented in the address model and profiles after Busan

- Instances
  - How to present multiple instances of attributes
  - Follow example in UPU profile
- Representation of codelists
  - How do we generate GML from profiled codelists when the class using the codelist, invokes the generalized class and not the specialized one
  - Subclass codelists in profile, but use the same name as for the base codelist
  - Switch on the namespace/package name
- OCL Advice
  - How to use it? Limitations? Shortcuts?
  - Not important, free text is fine



## Issues resolved by the HMMG

To be implemented in the address model and profiles after Busan

- Repository
  - How to do version control of the model in Tortoise?
  - Rather not use it
- Profiles (informative) included in the harmonized model?
  - Should they be included? Yes, current structure is fine.
- Request access to the repository
  - Japan (Hide), Korea (Bo-mi + Taekjin Kim), UK (Rob Walker)



## Issues resolved by the HMMG

To be implemented in the address model and profiles after Busan

- Browse for type names
  - Don't type the names!
- Class, attribute, role and stereotype names
  - Don't embed spaces
    - child address → childAddress
  - Should be usable as variables
- Stereotype names should be all lower case
  - e.g. codelist
  - i.e. case insensitive



## Issues resolved by the HMMG

To be implemented in the address model and profiles after Busan

- Parent/child
  - Correct terminology? Rather whole/part. Stick to child/parent for now.
- Feature type classes (and subclasses) should be stereotyped "featureType"
  - e.g. Address, AddressComponent, etc.
  - NB: stereotypes are not inherited, i.e. also add these stereotypes in the specialized classes.
- Role name "addressComponents" should be singular



### Issues resolved by the HMMG

- CI\_Organisation from the new 19115-3 cannot be encoded yet, since 19115-3 is being worked on and not yet implemented in UML->XML tools.
  - Keep dependency 19115-1
  - Workaround for NZ is to keep informative (19115-1) and implementation (19115:2003) models separate
- Lifecycle, Provenance and Locale conformance classes
  - Define everything in a single package
  - Define constraints for each conformance class

To be implemented in the address model and profiles after Busan

