**SUBJECT: - Nillables and Identifiers in GeoSciML-Lite**

*A conversation between Eric, Tim and Ollie*

**From;** Boisvert2, Eric (NRCan/RNCan) via GeoSciML

**To:** GeoSciml OGC mainling list <geosciml@lists.opengeospatial.org>
**Sent:** 11 June 2017 15:48

I’ve added nillable to all properties (still need to validate and test – I’m hone *sans* XmlSpy), but while doing it, I had a second though about identifier property in Lite. We always considered it as a mandatory identifier (notwithstanding the discussion about gml/gsmlp identifier), but now it can be empty with a nil – is this the intent ?

**From:** Duffy, Tim [mailto:trd@bgs.ac.uk]
**Sent:** June 20, 2017 10:17

Eric/Ollie – I am not sure I have spotted a list response to this but before I respond globally I want to check with you two – you see I thought you were only ever making the geosciml complex property 4.1 all nillable not the geosciml-lite schema – even before/during the recent meeting there was no intention to remove the mandatories ( there are several?) from geosciml-lite? Lite is of the stable but was always deliberately constrained (and mandatory constraint is good) in its design – and my memory for the meeting was we still wanted at least the gsmlp identifier to remain and be mandatory (along with other things).

Would welcome your memories

**From:** Boisvert2, Eric (NRCan/RNCan) [mailto:eric.boisvert2@canada.ca]
**Sent:** Wednesday, 21 June 2017 12:28 AM

> 4.1 all nillable not the geosciml-lite schema

Ok – that make sense.

Will remove nillable in gsmlp unless Ollie has objections.

I’ll have to contact Clemen to figure out how to have this done correctly by ShapeChange – my naïve plan to have a quick fix failed miserably

**From:** Raymond Oliver
**Sent:** Friday, 23 June 2017 5:01 PM

My humble apologies, this email slipped through the cracks in the mountain of email I had on my return to the front.

I agree. Lite should not have nillable properties. Just use 0..1

Only the gsmlp:identifier and gsmlp:shape are 1…1

Cheers,

Ollie

**From:** Raymond Oliver [mailto:Oliver.Raymond@ga.gov.au]
**Sent:** Friday, June 23, 2017 3:10 AM

Oops, hold that thought.  I should have read deeper into the email trail…

Now that you mention the gml:identifier/gsmlp:identifier thing, Eric, I think we should perhaps make gsmlp:identifier also 0..1.  The gml:identifier (ie, the self-referencing uri of the Lite feature) could be mandatory (we can do that in schematron, but not the schema).  But not all providers of Lite features are going to have a corresponding full complex GeoSciML feature that they can point to, so making gsmlp:identifier (ie, the uri of a GeoSciML feature) mandatory is probably not a good idea.

**From:** Boisvert2, Eric (NRCan/RNCan) [mailto:eric.boisvert2@canada.ca]
**Sent:** 23 June 2017 11:09

1.      Mandatory but not obligatory resolvable

2.      Non mandatory

?

**From:** Raymond Oliver [mailto:Oliver.Raymond@ga.gov.au]
**Sent:** June 23, 2017 06:30

I prefer option #2

If the notes on gsmlp:identifier say that it is an identifier for a GSML-encoded feature, then either

   a) a GSML feature exists and therefore it will resolve, or

   b) there is nothing to point to at all

**From:** Boisvert2, Eric (NRCan/RNCan) [mailto:eric.boisvert2@canada.ca]
**Sent:** Friday, 23 June 2017 9:28 PM

It’s also a primary key of that record – resolvable or not

**From:** Duffy, Tim [mailto:trd@bgs.ac.uk]
**Sent:** June 23, 2017 07:14
**To:** Boisvert2, Eric (NRCan/RNCan) <eric.boisvert2@canada.ca>; 'Raymond Oliver' <Oliver.Raymond@ga.gov.au>
**Subject:** RE: nillables in Lite [SEC=UNCLASSIFIED]

Thanks –

My view: we looked really hard at this identifier and gml:identifier in Vienna. Are we creeping away from/forgetting original intents again?

I find it hard to believe that when we ( Alistair Ritchie big input) first designed the whole geosciml-portrayal suite we were making gsmlp:identifier mandatory because we were always setting up a portrayal service pointing to full features (surely you have not done that yet for all your portrayal services in oz Ollie?). Well I am sure in practice we do not so maybe we always intended “Mandatory but not obligatory resolvable” – but did we in fact intend THIS identifier to be the role ( pointing to itself

= each simple feature) we know recognise gml:identifier was designed for? (but we never had it available to us using gml 3.1.1)

Just in from some new Sylvain EPOS minutes (unfortunately Carlo NOT at that EPOS meeting):

“

1.      **IT – identifier discussion**

From an architectural point of view, it is important that each data provider provides resolvable identifiers on their features that are harvested by WP15 central node.

For example

·         Providing : <http://ressource.brgm-rec.fr/data/BoreholeView/BSS001REWW>

as value for gml:identifier is more useful than

·         Providing ‘BSS001REWW’ alone.

This allows other flows, features, data providers, client to refer to this.

This value should be considered as ‘contractual’ as a primary key in a database and should be the URI identifying that specific feature in a linked data approach.

From an infrastructure point of view, there are many solutions to have such a resolver functionality set up. However, having a first implementation could be quite rapidly achieved using Apache server in mode rewrite (<http://httpd.apache.org/docs/current/mod/mod_rewrite.html>).

The information flow is the following:

1°/ <http://ressource.brgm-rec.fr/data/BoreholeView/BSS001REWW>

--> 2°/ Apache server receives it and

----> 3°/ rewrites into internal WFS request (in proxy mode): <http://geoserverref.brgm-rec.fr/geoserver/ows?service=wfs&version=2.0.0&request=GetFeature&StoredQuery_ID=GetBoreholeViewById&ID=BSS001REWW>

-----> 4°/ the result is passed back to the client. Proxy mode allows to have all this done without the client being aware of the mechanics involved.

“

If we need to look at all the featuretypes – geologicunitview has an explicit special field for full complex GeoSciML feature specification – so here gsmlp:identifier is not for that purpose, then boreholeview is different…. Etc etc  Perhaps it is not clear yet in our own minds what we wanted gsmlp:identifier.

From the new OGC doc:

**/req/gsml4-lite/boreholeview-identifier**

identifier SHOULD resolve to a representation of a GeoSciML Borehole. (note should not shall?)

Also in the schema says:

[**identifier**"><annotation>](http://schemas.opengis.net/gsml/4.1/geosciml-lite.xsd)<documentation>Globally unique identifier:Primitive::CharacterString shall uniquely identifies a tuple within the dataset. Identifiers shall be formatted as URI according to RFC 3986. This URI could be used to access more detailed, such as a GeoSciML Basic, representation of the feature. identifier SHOULD resolve to a representation of a GeoSciML Borehole

but I note also:

**/req/gsml4-lite/boreholeview-parentBorehole-uri**

If present, parentBorehole\_uri SHOULD resolve to a representation of a GeoSciML borehole.

Also I note

**/req/gsml4-lite/geologicunitview-identifier**

Where possible, GeologicUnitView identifier SHOULD correspond to an instance of GeoSciML

MappedFeature.

The identifier should have the same value as the corresponding GeoSciML

MappedFeature identifier, if available.

And

**Requirement /req/gsml4-lite/geologicunitview-**

**/req/gsml4-lite/geologicunitview-specification**

specification\_uri value SHOULD refer the GeoSciML GeologicUnit feature that describes the

instance in detail. (also “**Use a** reference **or an identifier that can be used to reach a representation.”)**

What did we really mean by any difference between these two geologicunitview fields? I note the where possible….

And just to complete the area of (INSPIRE) interest (for faults supplying) :

**/req/gsml4-lite/sheardisplacemenstructureview-identifier**

identifier SHOULD correspond to a representation of GeoSciML MappedFeature.

So how mandatory or not and for which mandatory purpose or not did we mean the gsmlp:identifier – better known as the geologicunitview-identifier or boreholeview-identifier or sheardisplacemenstructureview-identifier identifiers to be?

Thanks

Tim

**From:** Boisvert2, Eric (NRCan/RNCan)
**Sent:** Friday, 23 June 2017 9:49 PM AEST

> (Tim) mandatory because we were always setting up a portrayal service pointing to full features

ERIC: Well, my understanding was to provide a level entry for people to serve GeoSciML, therefore, they don’t have a full service.  I think we have mixed use cases here.

**OLLIE** (Fri, 23 June 2017, 10:47 PM AEST): I agree with Eric fully. There is not an expectation of having a full GSML service.

TIM (Fri 23/06/2017 11:26 PM): So that means way back when we HAVE mixed use cases here – although I am not sure it wasn’t that we simply mixed explanations.

> (Tim) Well I am sure in practice we do not so maybe we always intended “Mandatory but not obligatory resolvable” – but did we in fact intend THIS identifier to be the role (pointing to itself = each simple feature) we know recognise gml:identifier was designed for? (but we never had it available to us using gml 3.1.1). Geologicunitview has an explicit special field for full complex GeoSciML feature specification so here

ERIC: gsmlp:identifier is not for that purpose

**OLLIE** (Fri, 23 June 2017, 10:47 PM AEST): I agree

TIM (Fri 23/06/2017 11:26 PM AEST): We are all clear on this point

Individual records actually are **MappedFeature** (which specification are GeologicUnit) – so it is the same purpose. Gsmlp:identifier and gsmlp:specification don’t point to the same thing.

My understanding of Vienna discussion was “issue unresolved, therefore status quo”.  We are stuck because two conflicting positions

1-      The standard really says that gml:identifier is the identifier

2-      Current simple WFSs don’t support mixed namespaces.

**OLLIE (**Fri, 23 June 2017, 10:47 PM AEST): The more I think about this, the more my brain hurts. I don't think I previously appreciated the full extent of problems that having 2 attributes with the same name (requiring 2 namespaces) are going to cause us in our aim to provide a "simple wfs" model.  Using the additional gml properties and namespace trashes our simple wfs aims for the Portrayal/Lite schema. You are meant to be able to deliver a Lite service without using App Schema plugins (ie, ArcGis Server).  As soon as we use the gml attributes, which introduces a second attribute namespace, we then have a complex wfs, so ArcGIS data providers can't deliver it?

So - the purist will insist that standard are made to be followed, otherwise you introduce you own sematic/behaviour, so why bother following the standard. The pragmatist will say that it’s all fine, but there is no software to implement the standard, so there is no behaviour to argue about so let’s go with our little gentlemen agreement – we are amongst friends anyway.

If I am to follow my role of chair, I must position myself with the purist.

Now, if we need to bring it gml:identifier, we MAY find another role for gsmlp:identifier (actually, what I see as the correct role for gsmlp:identifier because I think we got it wrong in the spec)

gml:identifier : identifier of the record itself. It revolve to itself – a gsmlp version  (that’s what gml:identifier is GeoSciML full is supposed to do !)

gsmlp:identifier : identifier for full blown GeoSciML

gsmlp:specification (when present) : identifier of the feature the MappedFeature points to (full GeoSciML)

**OLLIE (**Fri, 23 June 2017, 10:47 PM AEST)**:** I do believe that was our Vienna decision. But I am worried that my comments above about having 2 attributes called "identifier" in a simple wfs service might make that impossible?

If content negotiation is provided, gml:identifier and gsmlp:identifier might be the same URI, because lite and full are considered different representations of the same feature.  And now we are back to purist / pragmatic.

Purist will say gml:identifier and gsmlp:identifier represent the same real world object.  I would now be pragmatic and say : right, but gsmlp:identifier does not have to follow any GML identifier rule, it’s sometime we made up as a convenience.  We only need to honour gml:identifier

Now I need a coffee

**From:** Boisvert2, Eric (NRCan/RNCan) [mailto:eric.boisvert2@canada.ca]
**Sent:** Friday, 23 June 2017 11:15 PM AEST

> (Ollie) we then have a complex wfs, so ArcGIS data providers can't deliver it?

Is complex WFS == mixed namespaces ? (it’s already mixed because of gml geometry, although not at the root property level)

**From:** Duffy, Tim [mailto:trd@bgs.ac.uk]
**Sent:** Friday, 23 June 2017 11:16 PM AEST

Yes – hold on a sec – yes we know they implemented this mix for the geometry they just did not do it for any other gml: properties

**From:** Duffy, Tim [mailto:trd@bgs.ac.uk]
**Sent:** Friday, 23 June 2017 11:26 PM AEST

All three of us have hurting brains. Please remember that it is not just arcgis that cannot populate the gml:identifier property in their simple feature WFS – it is ALSO mapserver and geoserver – we BGS tested this – which is why in Vienna I was trying to see if there was a practical or logical reason (such as of course they are not mandatory properties – but I agree that is a weak one here software providers!) why all such suppliers never bothered to make the gml:identifier etc accessible when they – late in the day – added gml 3.2.1 wfs 2.0 capability to their simple feature wfs gml 3.1.1 offerings.

Please also be clear we are proposing ADDING a gml 3.2.1 simple features profile – and we have just had to learn that means full blown complex property wfs software (not actually available from mapserver).

People who want a simple feature wfs not requiring such full blown software (and whose community does not require them to supply gml:identifier) can and should continue to use our first profile the simple feature gml 3.1.1 one – and all the above named software will produce the wfs even if you just configured the wms with that single flat table containing all the properties you really need.

So in fact we were focussing on why is/was gsmlp:identifier mandatory – and reading what u 2 have pointed out I would deduce it was because we needed a unique
“It’s also a primary key of that record – resolvable or not” i.e. pointing to itself could even be e.g. esri software applying an internal record number – unique to that row in that physical dataset – and we effectively ADDED the ability to make that primary key the “identifier SHOULD resolve to a representation of a GeoSciML Borehole” – two ways of populating the same thing that will have the same affect – a primary key – the second way has an extra use.

So do we still need that primary key mandatory? Sounds like a YES to me – even if it is just a record number it is pointing to itself – why do we have to leap to a new version that provides gml:identifier to do the same thing ( and isn’t even mandatory). Look forward to a comment from both of you perhaps after a good weekends rest!

**From:** Boisvert2, Eric (NRCan/RNCan) [mailto:eric.boisvert2@canada.ca]
**Sent:** Friday, 23 June 2017 11:35 PM

> why do we have to leap to a new version that provides gml:identifier to do the same thing ( and isn’t even mandatory). Look forward to a comment from both of you perhaps after a good weekends rest!

Purist: because this is where identifiers go in GML.  Different namespaces == different properties (even if a human can see it’s the same name, computers don’t – it’s a different namespace)

Pragmatist: if GeoSciML community decide gsmlp:identifier, then it is for this community, with the understanding that a generic application that expects to find an identifier in gml:identifier because this is what the spec says, won’t find it.

**From:** Duffy, Tim [mailto:trd@bgs.ac.uk]
**Sent:** Friday, 23 June 2017 11:45 PM AEST

Pragmatist: gml:identifier did not exist when we designed  gsmlp – we only had gml 3.1.1 so please focus such comments  on the new profile -  by all means propose in the new profile that gml:identifier is made mandatory (because we need it as a primary key if you want to deprecate gsmlp:identifier in this new profile – that is what Sylvain was suggesting!)  in our community for example.

What we need is a concensus decision on your nearly changing gsmlp:identifier with gml 3.1.1. schema from mandatory to non-mandatory – I can assure you now many people and a big role out I want to do for onegeology in the next 12 months on helping people all over the world create (and use in desktops and harvest) simple feature wfs will be using gml 3.1.1 profile from what we have learnt – I am just unsure if gsmlp:identifier should thus remain mandatory or not.

**From:** Boisvert2, Eric (NRCan/RNCan) [mailto:eric.boisvert2@canada.ca]
**Sent:** Saturday, 24 June 2017 12:04 AM AEST

> gml:identifier did not exist when we designed  gsmlp – we only had gml 3.1.1 so please focus such comments  on the new profile

Good point, I forgot about this.

> I am just unsure if gsmlp:identifier should thus remain mandatory or not.

I vote to make it mandatory because it’s a primary key

**From:** Raymond Oliver
**Sent:** Monday, 26 June 2017 10:00 AM

OK, there was a lot to digest there.  Hopefully this is my last word… (I’ve said that before!)…. I vote that, in the new gml3.2 profile, gsmlp:identifier should be mandatory but not necessarily resolvable. Thus it can still be used as a primary key.

**From:** Duffy, Tim
**Sent:** 26 June 2017 12:46
**To:** 'Raymond Oliver' <Oliver.Raymond@ga.gov.au>; 'Boisvert2, Eric (NRCan/RNCan)' <eric.boisvert2@canada.ca>
**Subject:** RE: nillables in Lite [SEC=UNCLASSIFIED]

I’m trying to get the last word out of you Ollie as it were – that is this all started with Eric trying to carry out his action to allow nillable all the main geosciml 4.1 schemas and then trying  by accident to affect the gsmlp schemas – so I raised the issue of believing we collectively had NOT asked to nil the gsmlp.

So I INFER from “new gml3.2 profile, gsmlp:identifier should be mandatory but not necessarily resolvable.” Below that

Both you and Eric and I agree the current gsmlp gml 3.1.1 should be the same as what you are both voting for  the new gsmlp gml 3.2.1 schema

I just need that certainty – it was the old gml 3.1.1 schema I raised the issue about.

Do we need to change the wording for clarity about how we describe gsmlp:identifier in the gml 3.1.1 (i.e. the current ogc standard) or do we believe it already implies precisely that “gsmlp:identifier should be mandatory but not necessarily resolvable” and should be used for referring to its own features self.

I just can’t spot a clear vote from Ollie on the ogc gsmlp gml 3.1.1 schema.

Thanks

Tim

**From:** Duffy, Tim [mailto:trd@bgs.ac.uk]
**Sent:** June 27, 2017 07:48
**To:** Raymond Oliver <Oliver.Raymond@ga.gov.au>; Boisvert2, Eric (NRCan/RNCan) <eric.boisvert2@canada.ca>
**Subject:** RE: nillables in Lite [SEC=UNCLASSIFIED]

And before we do get a final ‘yes’ from Ollie

Can I also ask

1). What use case definition wording you intend then to use (now that we have raised the issues and thought about it) for  the (boreholeview) gsmlp:identifier schema with gml 3.2.1 the new one – will it be the same as the gml 3.1.1 one i.e. ‘this is mandatory but need not be resolvable. If a reference is available to a full borehole specification give it. If it is not just populate with a reference to this boreholeview feature row….’ [both being database primary keys].

2). Ollie do you have the group photo taken in vienna – that I imagine you were going to put up against the wiki minutes (which I did eventually manage to edit)  - we onegeology want to use ti to tweet about the 1gg meetings – it seems it is the most suitable picture existing – can you send?

Cheers

Tim

**From:** Boisvert2, Eric (NRCan/RNCan) [mailto:eric.boisvert2@canada.ca]
**Sent:** Tuesday, 27 June 2017 9:50 PM
**To:** Duffy, Tim; Raymond Oliver
**Subject:** RE: nillables in Lite [SEC=UNCLASSIFIED]

> ‘this is mandatory but need not be resolvable.

Yes – I suppose.

**From:** Raymond Oliver [mailto:Oliver.Raymond@ga.gov.au]
**Sent:** 28 June 2017 02:50
**To:** 'Boisvert2, Eric (NRCan/RNCan)' <eric.boisvert2@canada.ca>; Duffy, Tim <trd@bgs.ac.uk>
**Subject:** RE: nillables in Lite [SEC=UNCLASSIFIED]

1.       gsmlp:identifier is mandatory, but not necessarily resolvable.  In both GML 3.1.1 and 3.2 versions.

2.       I like Tim’s definition of BoreholeView/gsmlp:identifier for both GML 3.1.1 and 3.2  “*Mandatory, but need not be resolvable (ie, SHOULD be resolvable, not SHALL be). If a reference is available to a full GeoSciML Borehole feature then give it. If it is not, then populate with a reference to this BoreholeView feature …. [both being database primary keys]*”

3.       Do we make any “gsmlp” attributes “nillable” in GML 3.1.1 or 3.2?   No.

4.       Photo… I have just sent out a call to track the photo down.  I’m not sure who has it.

Cheers,

Ollie

**From:** Duffy, Tim [mailto:trd@bgs.ac.uk]
**Sent:** June 28, 2017 04:40
**To:** Raymond Oliver <Oliver.Raymond@ga.gov.au>; Boisvert2, Eric (NRCan/RNCan) <eric.boisvert2@canada.ca>
**Subject:** RE: nillables in Lite [SEC=UNCLASSIFIED]

I like the fact you like it – am just trying to reflect back and finally check what I understood from you two and the discussions in Vienna, indeed I think this is what was agreed in Vienna and we have just looked at it more closely and considered the option to make it non-mandatory in fact, which we have continued to reject. I shall leave it to the new chair how, if necessary, to add to the meeting notes of Vienna (i..e this discussion was simply an extension of the unrecorded reference to ‘tim’s meeting summary emails’ trying to explain to Sylvain the issues) or just bear this in mind when it comes to writing the new gml 3.2.1. document.

Cheers and thanks for engaging,

Tim