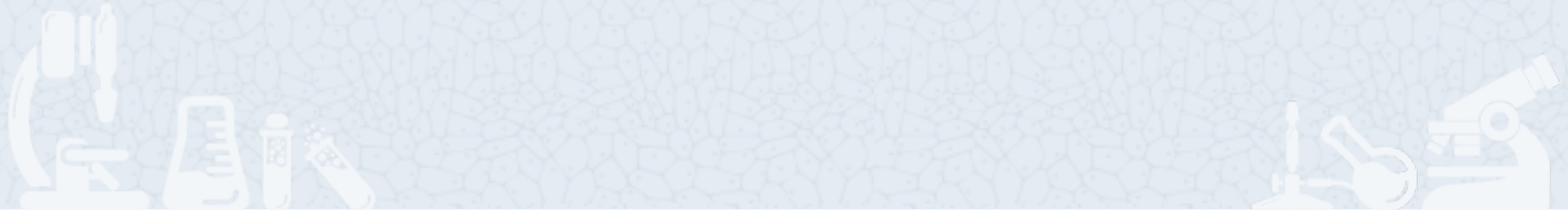# How to change the model and what that breaks

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Overview

- *Designing changes*

- *Prepare for data model change*

- *Publishing interim data model changes*

- *Publishing a full data model release*

- *Changes to data model*

- *Bio-Formats*

  - *Building schema changes - 1 - code generation*

  - *Building schema changes - 2 - breaking code*

  - *Changes to transforms*

  - *Building schema changes - 3 - the rest*

- OMERO

- Documentation

Designing changes

o Ideas -> Diagrams

o Publish discussion document, review and repeat until everyone is happy

o *Input from Omero database people vital at this stage as some things that make sense in the schema & tiff will be performance kills on the database.*

Prepare for data model change

o *All work takes place in a breaking build!*

o Versioning the data model

o See: https://www.openmicroscopy.org/site/support/ome-model/schemas/index.html

o Schema namespace changes

o Update build value ant and maven

o Move to new -dev-#+1 then re-instate old -dev-#

o Commit to git as Part1 and Part2

Publishing interim data model changes

o *For tests to pass the schemas must be live online*

o Force push to special website branch on team.git

o team repo - ssh://git.openmicroscopy.org/home/git/team.git

o Published using WEBSITE-sync job

o WEBSITE-sync - http://ci.openmicroscopy.org/view/Mgmt/job/WEBSITE-sync/

Publishing a full data model release

o Schema namespace changes

o Update build value ant and maven

o Move to new 20xx-xx then remove old -dev-#

o Commit to git

o Force push to special website branch on team.git

o team repo - ssh://git.openmicroscopy.org/home/git/team.git

o Published using WEBSITE-sync job

o WEBSITE-sync - http://ci.openmicroscopy.org/view/Mgmt/job/WEBSITE-sync/

o *Needs done before final tagging as cannot test until live*

Changes to data model

o Change the schema file

o Create a sample file that exhibits the new change

o *Show the sample file around for feedback, it has been really common to get a negative reaction at this point as some impact of a decision made using diagrams is realized*

o *I used Oxygen as IDE for this work, we have a 1 year academic maintance licence, remember to keep this renewed as only $25*

Building schema changes – 1

- *All work takes place in a breaking build!*

- Code generation
  - xsd-fu python changes
  - genshi templates
    - model classes, enum classes and handlers, MetadataRetrieve, MetadataStore, and all metadata derivatives

- ant build (also cmake version)
  - ant clean compile-ome-xml

Building schema changes – 2

o *All work takes place in a breaking build!*

o Update existing Java

- Working through updating code in sequence, including SchemaResolver and reader file upgrade code

o ant build (also cmake version)

- ant specification

- ant formats-api

- ant formats-bsd

- ant formats-gpl

Changes to transforms

o *All work takes place in a breaking build!*

o Add new upgrade and downgrade transform

o Update the catalog file so Insight knows about them

o *I test in Oxygen IDE using the sample files *-downgrade.ome.xml and *-upgrade.ome.xml files having added new test cases to these. Running the transforms on the command line is also possible. Oxygen lets you debug and can test using a couple of libraries.*

Building schema changes – 3

- *All work takes place in a breaking build!*

- Update files that will not break until used

  - FakeReader, MetadataConverter, and tests

- ant build (also cmake version)

  - ant clean jars test

- maven build

  - mvn clean; mvn

  - *same as ant but code changes should already be made*

OMERO – minimum work for PR

o *All work takes place in a breaking build!*

o Full clean builds required to be sure

o Checkout your breaking bio-formats branch into omero

o Updating the mapping files

o New since Units, update ome-units repo

- templates and conversions.py

- ome-units repo - https://github.com/joshmoore/ome-units

o Change database and add to the upgrade script

o Code changes necessary to compile and pass tests

Documentation

o New Changes for 20xx-xx Schema section

o Omni-graffle diagrams

- png and svg(or is it pdf?) versions

o Generated Documentation

- Made with oxygen see new instruction on internal

- https://github.com/openmicroscopy/ome-internal/pull/205

o Sample files

- Upgrade all the existing *.ome files

- Add new file for new features

Open Microscopy Environment

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