API 0.7; or, The Whale

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LANCING A WHALE.

Engraving from "The cruise of the Cachalot", Frank Bullen; 1899

Outline

* A brief history of the OSM API(s)

* Planning 0.7 → FAIL

* Keeping it simple

* 0.7 Rebooted

* Moving forward

A brief history of the API

* Initially nodes, segments, "ways" & XML-RPC.

* Mar 2006: 0.3 HTTP RESTful API.

* Oct 2007: 0.5 moved to nodes, ways & relations.

* Apr 2009: 0.6 added changesets, version numbers & "diff" uploads.

A brief history of the API

* API 0.6 has been powering OSM for half of its life.

* API 0.5 powered it for a third.

Planning 0.7 → FAIL

* Planning started even before 0.6 was released.

* Almost 4.5 years later, we're still using 0.6 with some minor tweaks.

* We must be pretty close to perfect, right?

WRONG

Planning 0.7 → FAIL

* Too many ideas.

* Complex ideas.

* At least 72 requests on the wishlist.

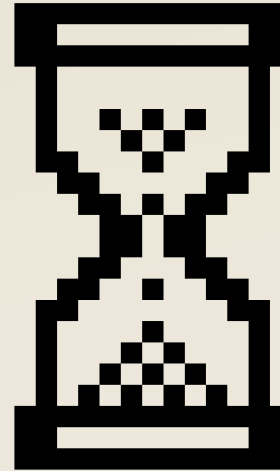* Many special interests.

Planning 0.7 → FAIL

Keeping it simple

* What actual problems do API users encounter?

* Which bits of the API actually get used?

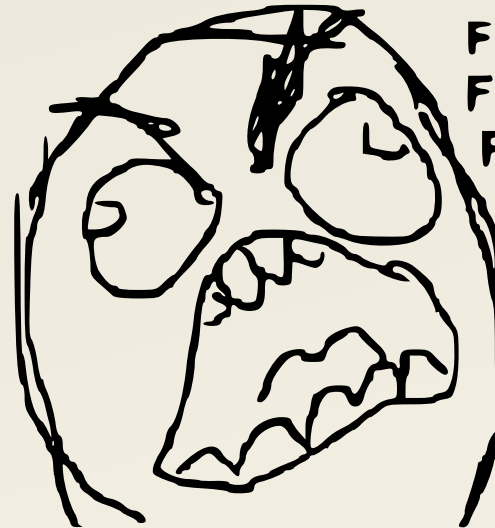* How can we provide more functionality without the software becoming monstrous?

Problem

Uploading
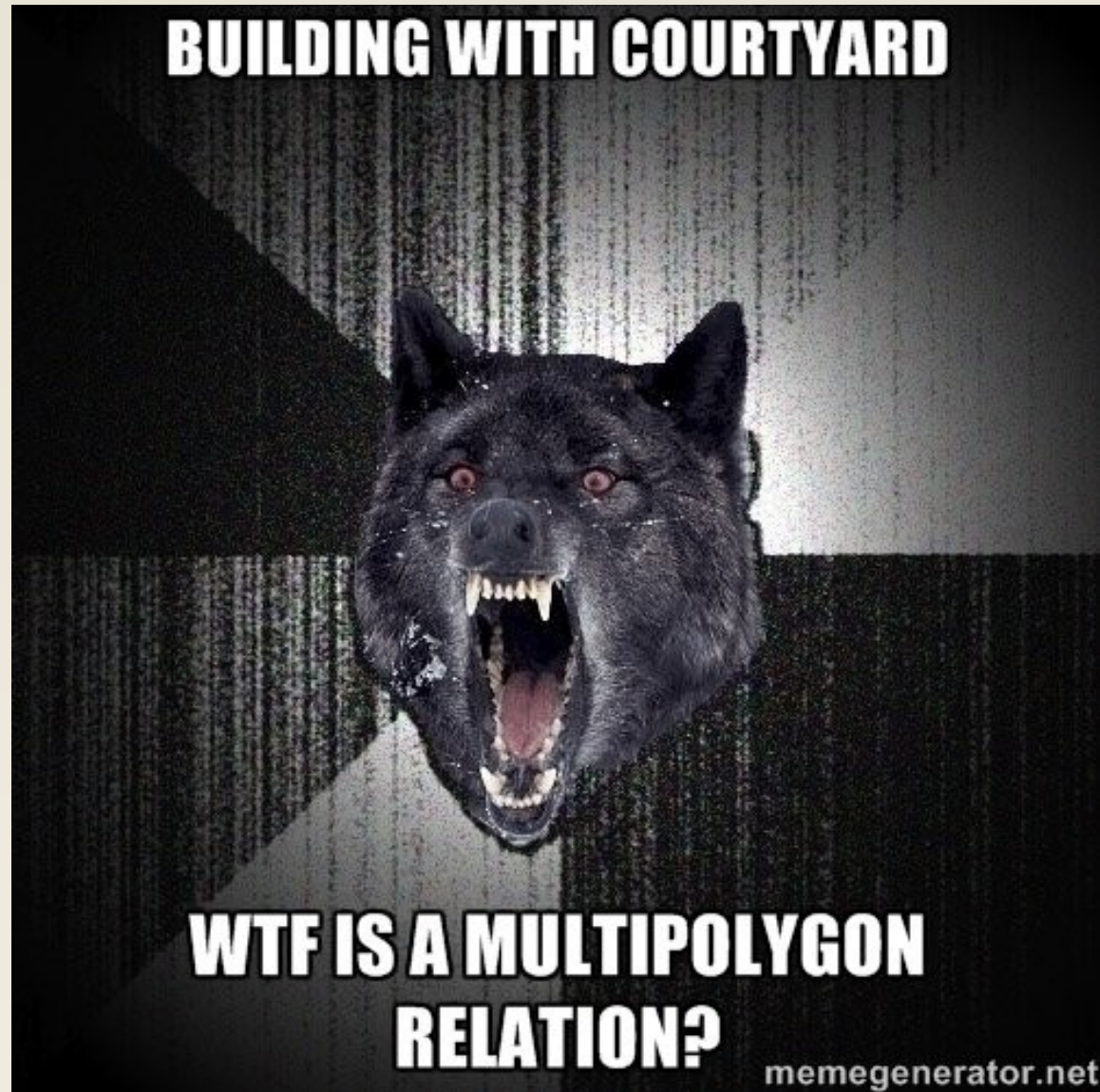changeset

...

...

500 Server Error

Timeout

!

!

Timeout

FFFFFFF
FFFFFFF
FFFFFF
FFFUU
UUUU
UUUU
UUUU
UUUU
UUUU.

Upload Queues

Upload Queues

* 99% of users use changeset/upload.

* But sometimes errors occur.

* Shorten the window:

  * Upload is tracked and queued.

  * Status can be queried.

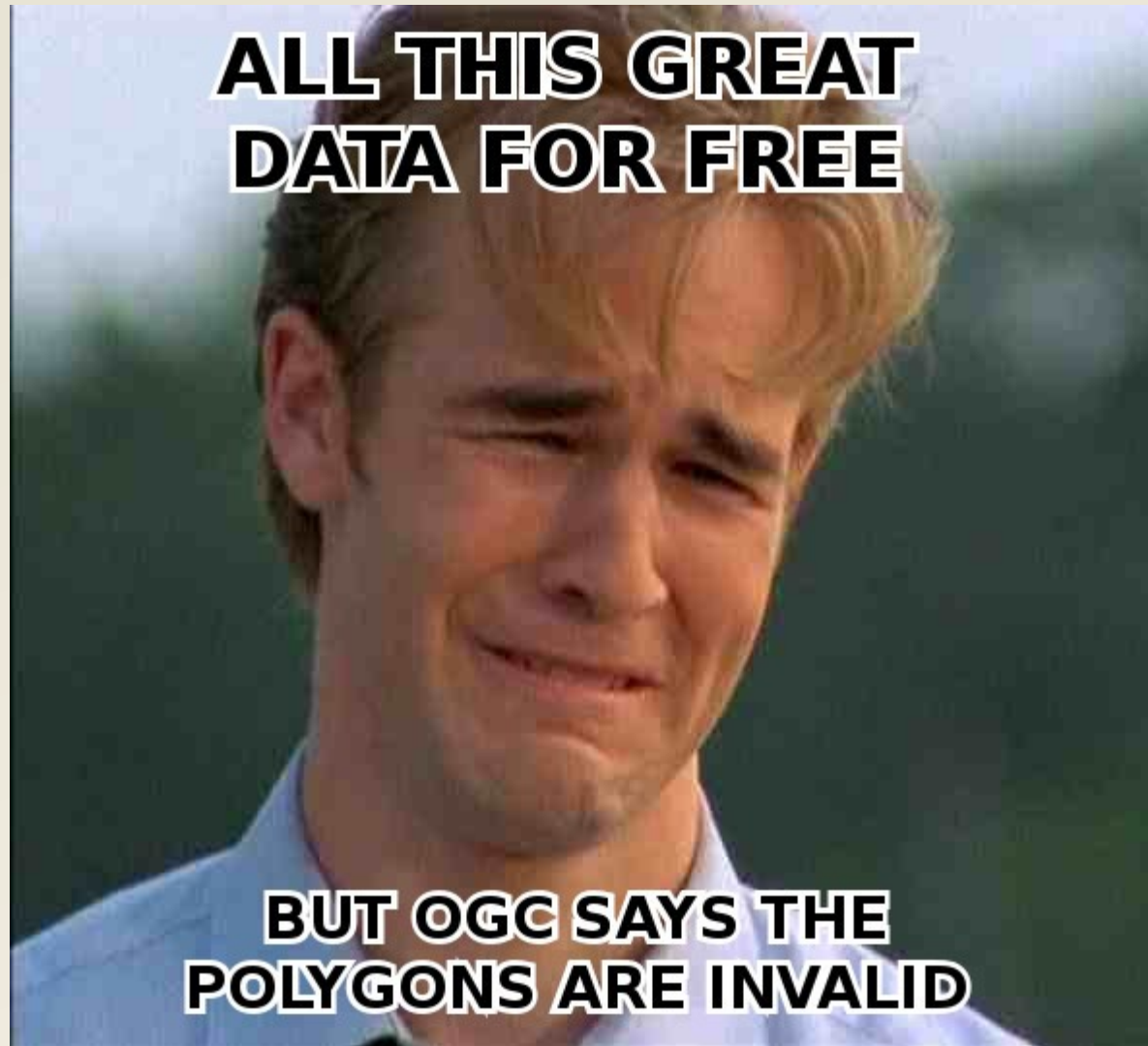 * Better error characteristics.

* Allows for load management.

Problem

Problem

Problem

Areas

Areas

* How to make it work for small buildings and huge coastlines?

* Difficult to make something practical & simple.

* Jochen is going to talk about this later.

Problem

XML? Yuck!

Representations

Representations

* XML not definitely slower than JSON[1].

* Personal preference & tooling.

* CGImap already supports this.

* Rails_port work began... and stalled.

[1] Lee, David. *"Fat Markup: Trimming the Myth one calorie at a time."*
In Proceedings of Balisage: The Markup Conference 2013. Balisage Series on Markup Technologies, vol. 10 (2013).
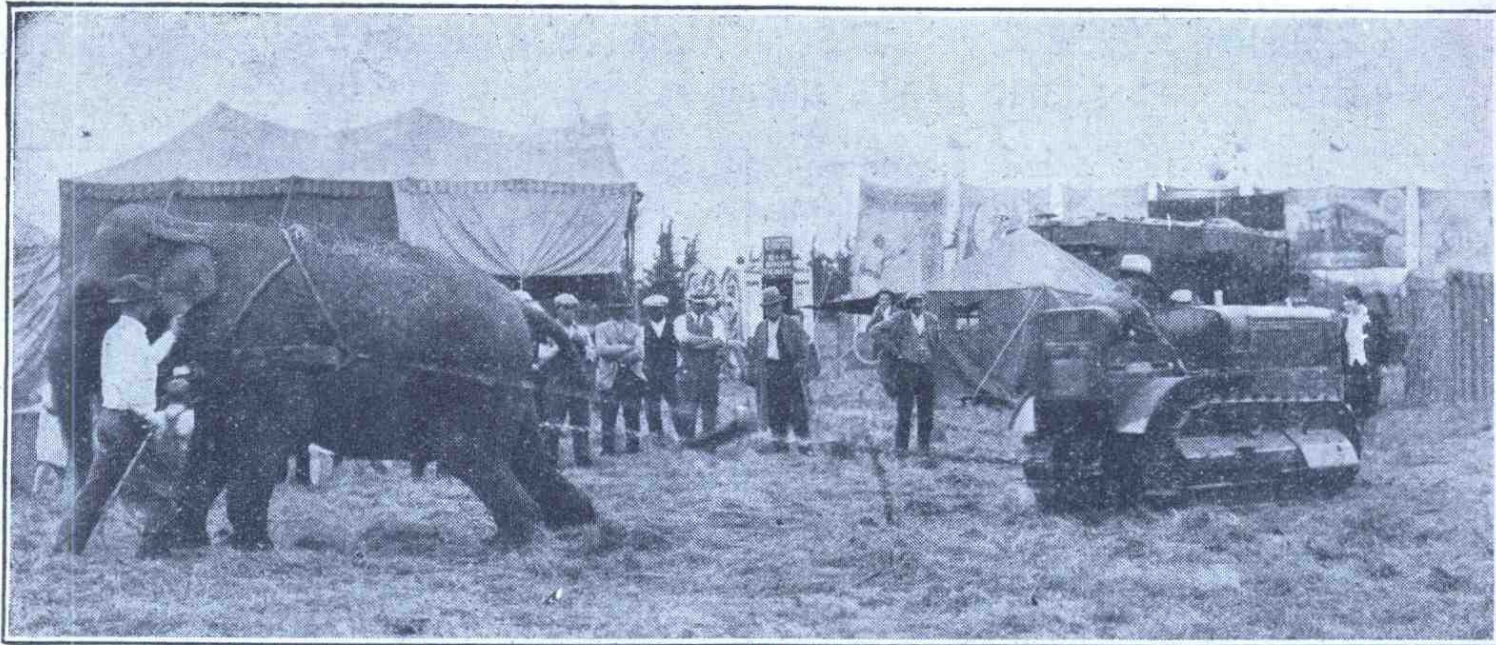
Problem

CC-BY-SA cosmic_spanner via flickr

Tiles

Tiles

* Tiled "map" call can be cached.
* It has been done before (TRAPI).

Problem

Tractor Out-pulls Elephant in Tug-of-War

SEVENTY-TWO hundred pounds of elephant came in second best in a tug-of-war recently conducted between Ruth, a 30-year-old elephant, and a small tractor. Four legs proved to have less "pulling power" than the caterpillar treads of the tractor. The elephant is shown bracing herself just as the irresistible pull of the tractor began to carry her backward.

Modern Mechanix; Nov, 1928

Decoupling

Decoupling

* Baby steps: CGImap & gpx-upload.

* Split up database and software.

* Independent evolution → fewer common causes of failure.

* More "external" services in the API:
  * Overpass, Nominatim, OWL.

Moving Forward

* We have to start somewhere.

* If you are interested:

  * Pick up a project (e.g: OWL).

  * Come along to EWG meetings.

  * Start coding!

Moving Forward

Thanks for listening!

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