

# An XML-Format for Conjectures in Geometry

(Work-in-Progress)

Pedro Quaresma

CISUC, Mathematics Department  
University of Coimbra

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Germany



## An XML-Format for Conjectures in Geometry

DGSs & GATPs & Repositories of geometric constructions.

- ▶ loose coupling of tools;
- ▶ wide availability of their corpora;
  
- ▶ (+) describe constructions created with a DGS, allows sharing interactive geometry constructions across boundaries.
- ▶ (-) does not provide support for the conjectures.



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## The I2GATP format.

- ▶ An extension of the I2G format.
- ▶ support for geometric conjectures and proofs.
- ▶ Converters from/to the format.
- ▶ Integration with GeoThms & TGTP & Web Geometry Laboratory
- ▶ Supported by other tools *DGSs*, *GATPs*, . . . .



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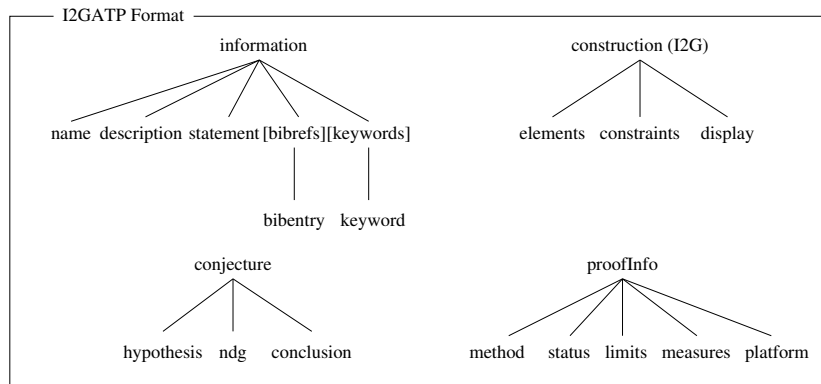
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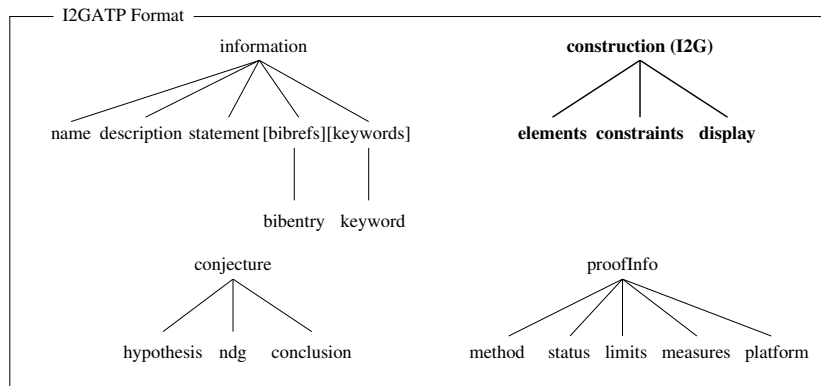
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# Overall Architecture



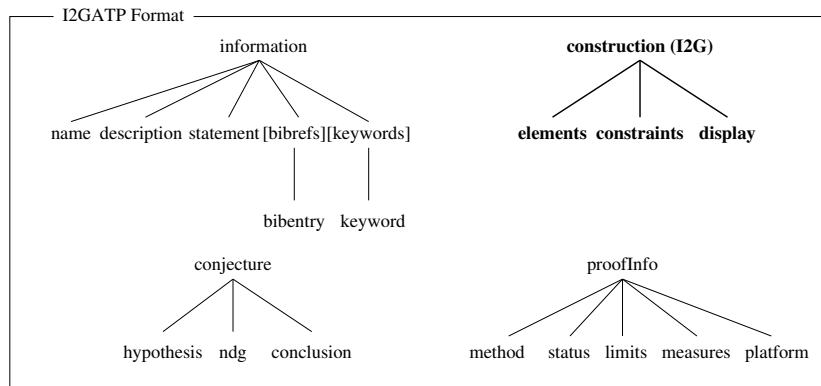
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intergeo.xsd;



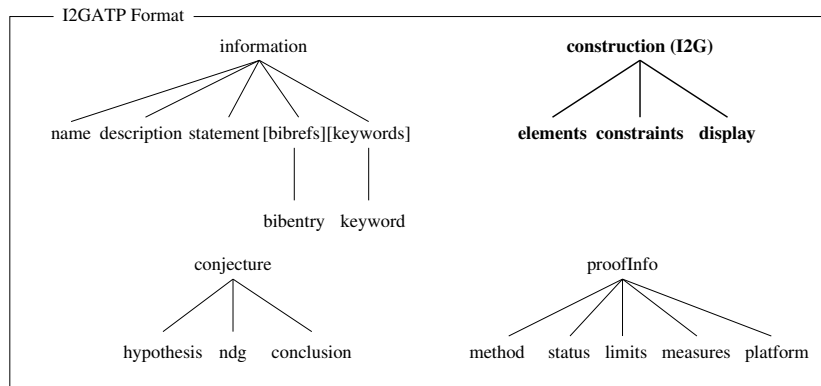
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# Overall Architecture



[intergeo.xsd](#); [proofInfo.xsd](#); [information.xsd](#); [conjecture.xsd](#).



# The Container

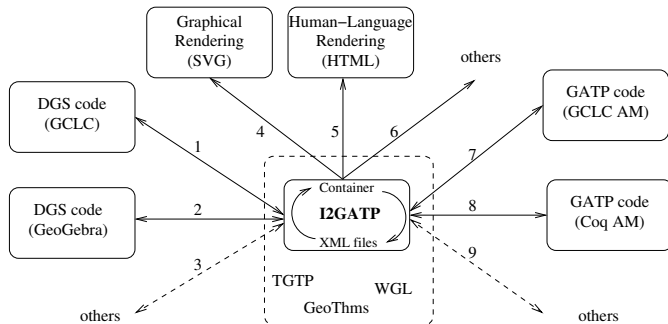
A zip file, superset of the I2G container.

information/	
information/information.xml	mandatory
construction/	optional
construction/intergeo.xml	mandatory
construction/preview.pdf	mandatory
construction/preview.svg	optional
construction/(...)	optional
conjecture/	
conjecture/conjecture.xml	mandatory
proofs/	optional
proofs/proof<GATP><Version><Method>/	mandatory
proofs/proof<GATP><Version><Method>/proofInfo.xml	optional
proofs/proof<GATP><Version><Method>/proofOutput.pdf	optional
proofs/proof<GATP><Version><Method>/(...)	optional
metadata/	
metadata/i2g-lom.xml	optional
resources/	optional
resources/<image_files>	optional
resources/(...)	optional
private/	
private/<domain-name>	optional
private/<domain-name>/<files>	optional





# Implementation



1 – From/to GCLC to/from I2G(ATP)

2 – From/to GeoGebra to/from I2G(ATP)

3 – From/to DGS to/from I2G(ATP)

4 – SVG rendering

5 – HTML rendering

6 – other: proofs; bibrefs., etc.

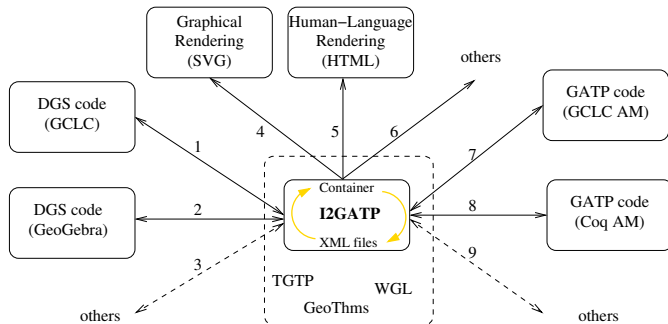
7 – From/to I2GATP to/from GCLC AM

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## Conclusions and Further Work

This is a work-in-progress. Questions and future work to be addressed:

- ▶ The XML/XSD format must be complemented with an extensive set of converters allowing the exchange of information between as many geometric tools as possible.
- ▶ The databases queries, as in TGTP, raise the question of selecting appropriate keywords. A fine grain index and/or an appropriate geometry ontology should be addressed.
- ▶ The I2GATP format does not address proofs. Should we try to create such a format? The GATPs produce proofs in quite different formats, maybe the construction of such unifying format it is not possible and/or desirable in this area.



# Thank You

