Use cases (1 of 3)

Use Case 1
Use an ontology, “A”, by an application to enable creation of a model 3D rendering using 2D models produced from a CAD application.

Use Case 2
Use a domain specific ontology, “B”, by an application to enable multiple 3D models to be combined “properly” into a scene for simulation, analysis, and visualization.

Use Case 3
Use an ontology, “C”, physical, chemical, and material properties by an application to define and control the “properly” in 'use case 2'.

Use Case 4
Create and maintain an ontology, “D”, for human and machine reasoning on the subject of modern computer graphics, how-to's, what works, what does not. Use upper ontology to the extent possible.

Use Case 5
Create and maintain an ontology, “E”, of 3D modeling principles for visualization. Use upper ontology and extend previous work where possible.

Use cases (2 of 3)

Use Case 6
Create and maintain an ontology, “F”, of mathematical principles (particularly those needed for 3D visualization models, but also for analysis of the physics, chemistry, or materials needed for each domain).

Use Case 7
Create and maintain topic models for design and continued verification and validation of ontologies, “A”, “B”, “C”, “D”, “E”, and “F”.

Use Case 8
Create and maintain semantic graphs from relevant documentation and laboratory results. (allow for visualization of the semantic graphs to enable humans to learn the topics and relationships.)

Use Case 9
Search for documents containing relevant state-of-the-art information.

Use Case 10
Setup a repository for semantic graphs and topic models for use cases 7 and 8.

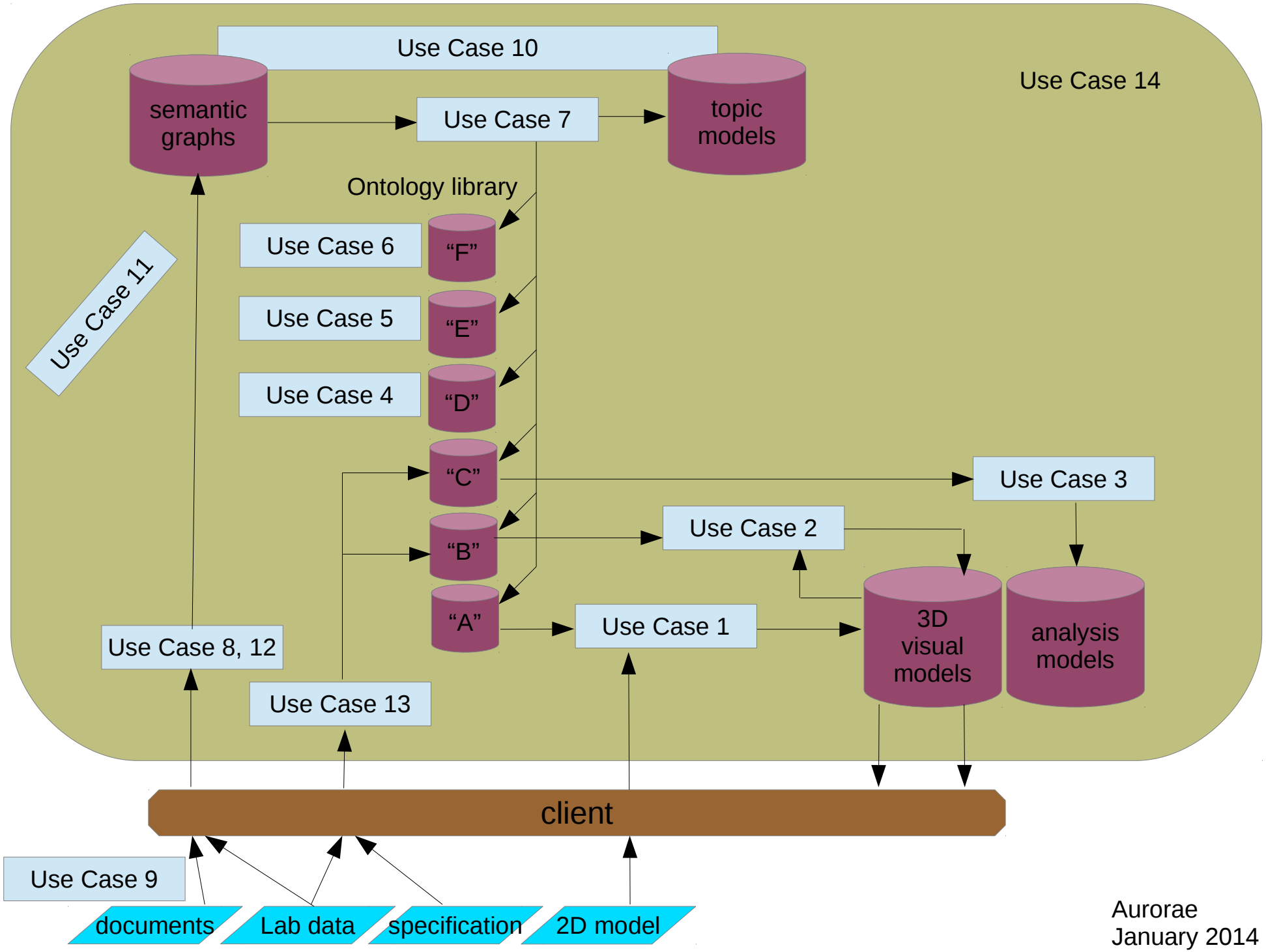
Use cases (3 of 3)

Use Case 11
Locate or create tooling to automate to the extent possible processing to go through steps 9, 8, and 7. (Where human-in-the-loop is required, the tooling should enhance and assist the human to the extent possible.)

Use Case 12
Locate or create tooling to create topic models from lab experiment data.

Use Case 13
Locate or create tooling to enable domain experts to create types “B” and “C” ontology for their domain without need to be experts in knowledge representation. (should be applicable to producing any of the above ontology.)

Use Case 14
Provide a service cloud for 3D visualization and analysis


Use Case 10
semantic graphs
Use Case 7
topic models
Use Case 14
Ontology library
Use Case 6
"F"
Use Case 5
"E"
Use Case 4
"D"
Use Case 11
"C"
Use Case 3
"B"
Use Case 2
"A"
Use Case 1
3D visual models
analysis models
Use Case 8, 12
Use Case 13
client
Use Case 9
documents
Lab data
specification
2D model
Aurorae
January 2014