

# CIAO, an Interface Agent Prototype to facilitate the use of ontology in intelligent authoring system: Ontological Engineering Applied to LKMS Construction

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## My Ph.D. Research Context

### Goal:

To illustrate the potential of ontological engineering (OE) for building Learning Knowledge Management Systems (LKMS). In particular the impact on the instructional design process was investigated. The value added of the OE approach was expected to be in terms of intelligence (flexibility, usability, adaptability, ...) in the production of instructional scenarios and learning objects.

### Research objectives:

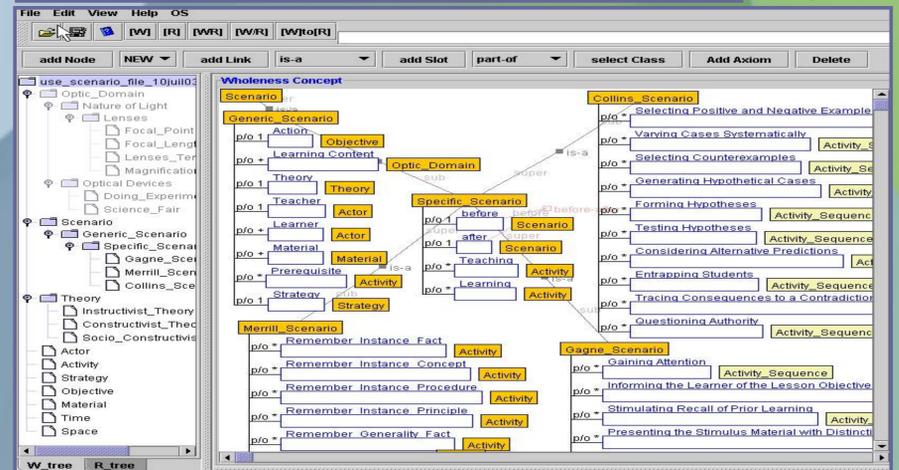
- 1 – To develop of an **Interface Agent prototype**, CIAO which is aimed at facilitating the use of a task ontology by LKMS in TELOS;
- 2 – To develop of a **methodology** of OE for the construction of an ontology of instructional design, based on multiple instructional design theories.

## My Research Context in LORNET 2.3

### Research Objectives:

- 1 – To inform the instructional scenario (as IMS-LD method) with an **ontology of instructional design theories**
- 2 – To develop an ontology-based method to **reference learning objects** (resources, activities and actor's competency)

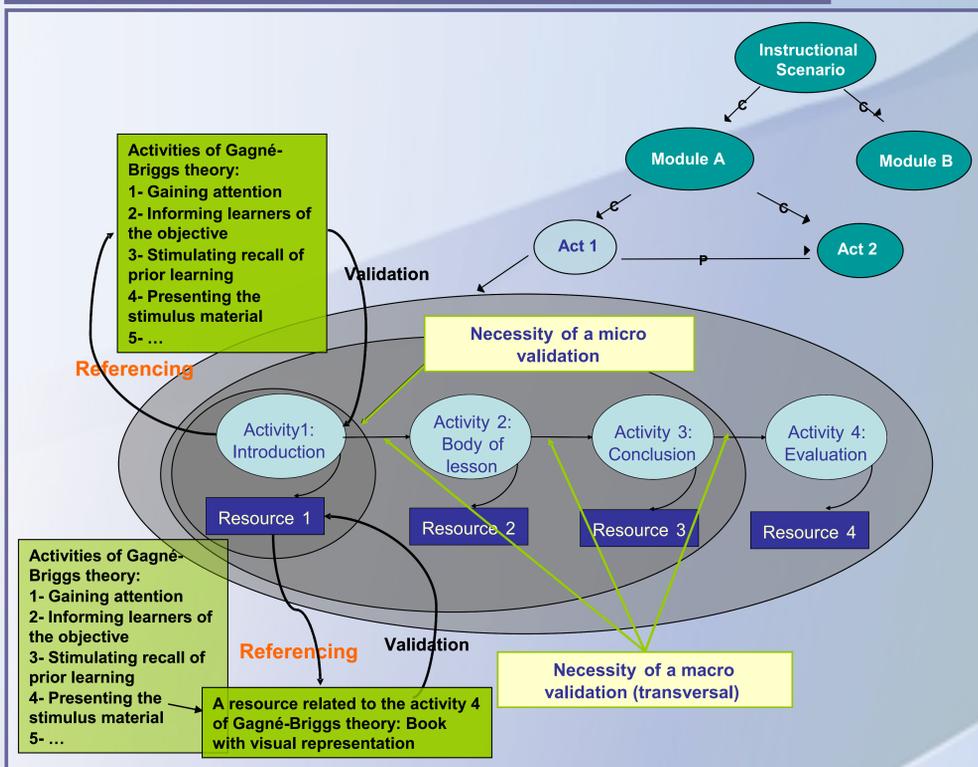
## Ontology of Instructional Design Theories (OIDT)



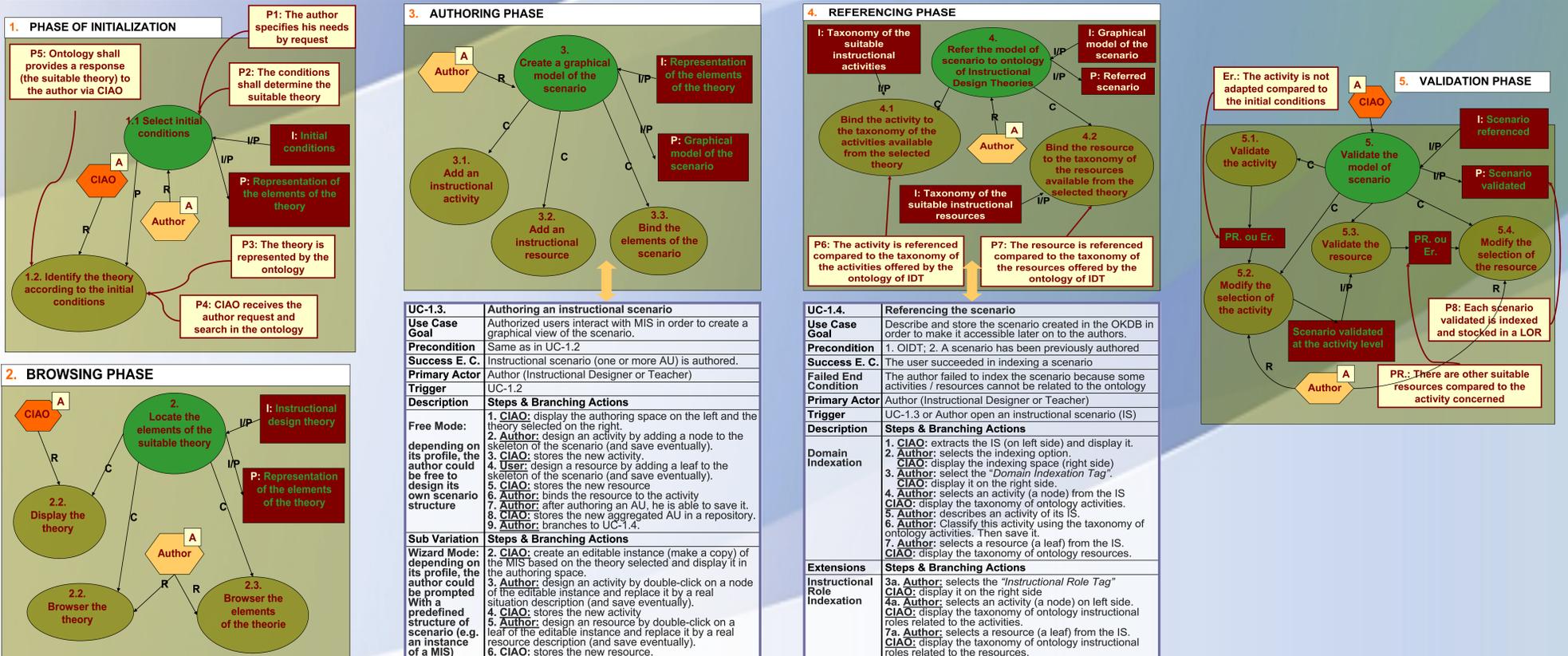
## Ontology exported in OWL

```
<?xml version="1.0"?>
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns="http://www.hozo.jp/owl/FILENAME#"
  xmlns:FILENAME="http://www.hozo.jp/owl/FILENAME#"
  xml:base="http://www.hozo.jp/owl/FILENAME/">
  <owl:Ontology rdf:about="">
    <rdfs:comment>
      HOZO:OWL Export TEST
    </rdfs:comment>
  </owl:Ontology>
  <owl:Class rdf:ID="WholnessConcept">
    <rdfs:label>WholnessConcept</rdfs:label>
  </owl:Class>
</rdf:RDF>
```

## Referencing an Instructional Scenario (or an IMS-LD Method)



## Use-Cases of the Interface Agent Prototype CIAO: Scenario for using an Ontology of Instructional Design Theories



## References

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- [3] Bourdeau J. & Mizoguchi R., "Collaborative Ontological Engineering of Instructional Design Knowledge for an ITS Authoring Environment", ITS 2002.
- [4] Bourdeau J., "Téléapprentissage, Design pédagogique et Ingénierie ontologique," STE-8/2001, pp. p.15-16, 2001.
- [5] Psyché V., Mendes O., & Bourdeau J., "Apport de l'ingénierie ontologique aux environnements de formation à distance," in STICEF, vol. 10, pp. 89-126, 2003.
- [6] Psyché V., Mizoguchi R., and Bourdeau J., "Ontology Development at the Conceptual Level for Theory-Aware ITS Authoring Systems", AIED, Sydney, 2003.
- [7] Paquette G. and Rosca I., "An Ontology-based Referencing of Actors, Operations and Resources in eLearning Systems," 2004.

