



# Multimedia Ontologies

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# Context

*EU Project "Multimedia understanding through Semantic Computation and Learning"(MUSCLE-NoE)*

*WP 9 "Representation and Communication of Data and Metadata"*

## ISTI-RAS Agreement

- To grant interaction between different communities in theNoE(vision, speech, text, ML, etc.)
- To define a strategy for theNoEto develop, maintain and provide an integrated metadata service able to support multiple meta-data standards, multiple users and the management of distributed and heterogeneous data, metadata and methodologies
- To act a facilitator in the communication, exchange and interoperability by advising on common formats, creating exchange interfaces, establishing additional standards where needed and formats for meta-data
- To establish a liaison with Standardization Bodies (W3C,...)
- Automated retrieval of image analysis algorithms;
- Automated construction and combination of algorithms



# Goals

## Two-Level Ontology Description



**Multimedia Object**

*MPEG-7 Ontology*

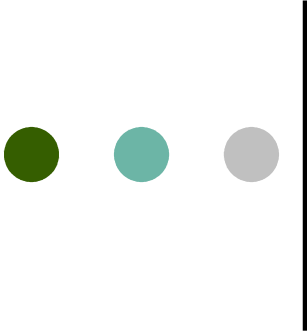
**Multimedia Understanding**

*Thesaurus*



towards the definition of a Concept-System





# Technologies

- MPEG-7 to describe and relate media features and metadata
- Ontology description languages
  - XML, XML Schema and RDF to facilitate interoperability and information exchange
  - OWL to describe domain ontologies
  - RuleML/SWRL to define inferencing rules relating media features to semantic terms and augment the ontologies
- Ontology design and evaluation tools
  - Editors (Protégé, OntoEdit, WebOnto, OntoLingua, etc.)
- Techniques for automatic multimedia annotation
- Inference engines (e.g. JESS, mandarax, sesame)