An ontology-based context management and reasoning process for UbiComp applications

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An approach for building a context-aware UbiComp system

- **Lexical Level**: translates environmental signals to context events
- **Syntactical/Representation Level**: translates context events to meaningful context information using an ontology
- **Reasoning Level**: provides models for context fusion in context hierarchies
- **Planning Level**: defines strategies and schedules actions to be taken in response to context variance
- **Interaction Level**: provides models for personal and collective interactions in AmI environments
Context management process

- Acquisition of raw data from sensors
- Sensors’ output interpretation to higher level context / Aggregation of various context
- Artefact’s state assessment
- Response activation based on local / global context information

System architecture

Artefact's Ontology
- Common Ontology
- Private Ontology

Ontology Manager
Rule Manager

Inference Engine
- Jess

Rule Base
- Facts
- Rules
Fin

Thank you very much!

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