

**Title:** “Contextual Information Processing in SmartWeb”

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**Abstract**

Contextual Information is essential for adaptive intelligent dialogue systems. Understanding the context of the user can help to return better answers to natural language queries. Especially for mobile question answering (QA) systems quick and precise answers decide whether users will use such systems or not. In the SmartWeb project - whose goal was to realize a multi-modal mobile access to the Semantic Web – we identified a variety of contextual parameters that we integrated via ontological contextual models. The developed models were used to adapt the systems internal states to allow for context-aware behaviour. They also helped to reduce the needed dialogue turns in question answering. While ambiguous queries could not be answered satisfactory so far by existing systems, our models were able to cope with such pragmatic ambiguities and resolve them. The contextual models not only helped to enrich the semantic representations for incoming natural language queries but also disambiguated complex queries using a semantic coherence measure. De-contextualization was used to cope with underspecified natural language queries, context-specific recommendations or selection of appropriate semantic wrappers to extract relevant semantic structures from heterogeneous web sources.