Chapter 6
Semantics in the Domain of eGovernment

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Abstract Semantics is becoming a tool of the utmost importance to boost interoperability and accessibility of information in many domains of eTechnologies. eGovernment is not an exception in this unstoppable trend. Actually, for the transition from a paper-based administration to an efficient, paper-less government, a pending challenge for eGovernment activities, an accurate use of semantic tools is required. For example, the semantic annotation of documents provides value-added services to retrieve information and inference processes can be carried out. Key aspects for efficient eGovernment solutions in the future are the provision of a holistic business model, a task tackled in several projects but not yet fully solved as shown in this chapter, and the application of more convenient semantic tools in each public administration process. In this line, lightweight semantics are currently adopted, which are also recommended and discussed in the current chapter with regard to their application to the domain of eGovernment.

6.1 Introduction

Electronic Government (eGovernment) solutions should not simply replace paper-based services with digitally delivered services. On the contrary, when providing solutions to the public sector, it should be carried out a complete and deep re-organization of the governmental processes under investigation. This is rather a revolution in the domain and goes hand-in-hand with new features and possibilities that provide value-added services for citizens, the final users of the newly developed eGovernment solutions. And these solutions can take advantage of semantic web

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technologies. For example, the adoption of semantic annotations brings outstanding features regarding information retrieval, knowledge discovery and document management. From an appropriate usage of the different possible levels of complexity made available by semantic technologies, e.g. from simple folksonomies and taxonomies (cf. [9]) to complex ontologies (cf. [11]), it is possible to derive innovative options in the fulfillment of public services.

In order to show how that is possible, we will first present a review of the actual concept of eGovernment. We then review state-of-the-art regarding semantics in the domain of eGovernment. Afterwards, we present a model for the integration of semantics into the domain of eGovernment. And finally, conclusions and comments with regard to future projects in this area are given.

6.2 The Domain

During the last couple of years, eGovernment is experiencing a huge development boosted by both demands of citizens for better services and growing requirements imposed by Public Administrations (PAs) to themselves by laws. Developers and stakeholders should not consider an eGovernment solution as a simple replacement of a paper-based administration with electronically driven services. On the contrary, eGovernment solutions should involve a deep transformation of services provided by PAs to citizens. Hereby, it should be considered the change from process-based applications into new paradigms of services that focus on current needs of citizens. This aspect of the problem is clear from the definition, whereby eGovernment refers “to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms” [18].

In order to accomplish this ambitious goal, a deep re-engineering process should be undertaken. In this long-term process one should consider the following three concepts:

- **Interoperability**: Addressed by all major institutions, interoperability must be considered at all phases of the project. Final solutions derived from current initiatives must properly address this feature at different levels, namely, on the technical level, the application level and finally, the semantics level.
- **Accessibility**: The fight against the digital gap is clearly present in the domain of eGovernment. PAs cannot afford to prevent users from using their own solutions for problems related to accessibility or availability.
- **Maintainability**: Solutions in PAs are expected to have a long life cycle. Applications will be in use for a long time. So, maintenance must be taken into account during the design phase and deployment phase of eGovernment solutions.