SEMANTIC COLLABORATION AND SENSING AS A SERVICE IN SEMANTIC WEB OF THINGS

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Abstract- The intrinsic contradiction hidden in the Internet of things, which is the mismatching between the diversification of forms expressing the thing's information and the insufficiency of understanding ability of the agents using the thing's information, hinders its intelligent development. Adding a semantic annotation for the expression of thing's information based on ontology will improve the ability to understand, to reason and to obtain information for the agents, and will essentially promote the Internet of things to "semantic web of things". For semantic web of things, its open and dynamic natures inevitably determine it is an open service ecosystem, and whether the hyper world itself and the individual in their sub worlds are in continuous development and evolution, so the semantic web of things must be self-adaptive to provide semantic collaboration services. To achieve all, this is based on "sensing as a service". From different points of view, such as dynamic space, service collaboration and web-based context management services, we analyze semantic collaboration mechanism. Respectively put forward self-adaptiveness formulas and self-adaptive support framework of semantic web of things, propose the definition and

architecture of semantic web of things and present sensing as a service model. This paper discusses semantic coordination mechanism and key support technologies for semantic web of things, which lay a theory and technology foundation for subsequent semantic collaboration application schemas, and the application experiments, validation and evaluation of semantic collaboration support system.

Index terms*: Internet of things, semantic web of things, semantic collaboration, semantic self-adaptiveness, sensing as a service.