Issue Tracking Systems Using Semantic Web Technology

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Abstract— This paper describes the outcome research project – Automatic Team Detector (ATD) system - that has been carried out as a result of implementing the semantic web technology in issue tracking systems (ITSs) to enhance their functionality, performance and qualification. An automatic team detector (ATD) semantic web based application is developed to automatically assign - without any human support - the requested issues created in Issue Tracking System (ITS) to their appropriate technical support teams to handle and fix these issues. By using semantic web technology, semantic based tracking systems can be enhanced and improved. Hence, the main goal of the developed system - Automating Team Detector (ATD) semantic web based application - is to give the answers for the following questions:

To which team must the created issue in ITS be assigned? In the other words, who is going to be responsible for handing the created issue in ITS and doing the work on it until it is fixed?

Keywords-issue tracking systems; symantic web; ontology development; automatic team detection

such as Bugzilla, JIRA, Rational ClearQuest, Trac, ... , weaknesses in assigned requested issues to their appropriate technical support teams have been found. Cases in point of these weaknesses are errors, extra effort, and excessive time consumption, and long life cycle until the requested issue arrives to its relevant technical support team. So, a semantic-based system is developed to tackle these issues. This system can automatically detect the appropriate technical support team that is responsible for dealing with the requested issue, depending on the issue's contained information and meaning by using semantic web technology. To realize this target, an ontology for the *information system (IT) team's job description and responsibilities domain*- which is described in section 5.1.1.1 - has been developed. Then, the automatic team detector (ATD) semantic-based application has been carried out. This application can analyze the created issue based on the semantics of its information, using the developed ontology. Hence,