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A Method of Representing Knowledge of Toolkits in a Pervasive Toolroom Maintenance System

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Abstract : The learning process needs to be so pervasive to impart the quality in acquiring the knowledge about a subject by making use of the advancement in the field of information and communication systems. However, pervasive learning paradigms designed so far are system automation types and they lack in factual pervasive realm. Providing factual pervasive realm requires subtle ways of teaching and learning with system intelligence. Augmentation of intelligence with pervasive learning necessitates the most efficient way of representing knowledge for the system in order to give the right learning material to the learner. This paper presents a method of representing knowledge for Pervasive Toolroom Maintenance System (PTMS) in which a learner acquires sublime knowledge about the various kinds of tools kept in the toolroom and also helps for effective maintenance of the toolroom. First, we explicate the generic model of knowledge representation for PTMS. Second, we expound the knowledge representation for specific cases of toolkits in PTMS. We have also presented the conceptual view of knowledge representation using ontology for both generic and specific cases. Third, we have devised the relations for pervasive knowledge in PTMS. Finally, events are identified in PTMS which are then linked with pervasive data of toolkits based on relation formulated. The experimental environment and case studies show the accuracy and efficient knowledge representation of toolkits in PTMS.

Keywords : knowledge representation, pervasive computing, agent technology, ECA rules
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