UNIVERSITI TEKNOLOGI MARA

A MODEL FOR PRESERVING THE MALAYSIA GOVERNMENT AGENCIES (MGA) ELECTRONIC RECORDS EVENT HISTORY METADATA

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Thesis submitted in fulfillment of the requirements for the degree of **Doctor of Philosophy** (Information Technology)

Faculty of Computer and Mathematical Sciences

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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ABSTRACT

It is acknowledged that the volume of electronic records (e-records) creation and transaction has significantly increased due to government's initiative to fully implement the electronic government (e-government). However, there are issues in handling and managing the vast amount of e-records creation and transaction. Part of the issues is the preservation of entire metadata of e-records generated and transacted for daily business activities. To date, research works conducted in addressing the issue of handling the e-records are focusing more on the creation and management of e-records within its lifecycle. In fact, the aspects of preserving the entire e-records metadata generated during daily business transaction activities are not attended by scholars in records management. Subsequently, the issue of authenticity of e-records arises or remain unsolved as the non-authenticate e-records metadata incapable to be used as an evidence in any legal obligation or dispute. Stemming from this non-authenticate erecords metadata issue, a case assessment on e-record metadata creation and preservation was conducted at Malavsia Government Agencies (MGA). Based on the assessment, it has found that the existing MGA's Electronic Records Management System (ERMS) application was incapable to properly capture and preserve the changes, access and modification of the e-records event history metadata. Considering the incapability, this study progresses to formulate metadata model for e-records which capable to capture and preserve the entire e-records event history metadata. The formulation of e-records metadata model and event history metadata begins with an indepth review of the literature. The reviews have resulted in identification of nineteen (19) elements namely event Title, event Date/Time, event Description, event Type, event Administrative History, event Identifier, event Identifier Type, event Identifier Value, event Detail, event Sequence, event Outcome, event Outcome Information, event Outcome Detail, event Outcome Detail Note, event Outcome Detail Extension, event Next Occurrence, event Plan, event Relation and event Trigger. Upon identifying those 19 elements as a model for event history metadata, eight (8) experts from the National Archives of Malaysia were approach to examine and verify the model. The verification process uses face-to-face interview techniques. The interviews revealed that out of 19, eight (8) elements (event Title, event Date/Time, event Type, event Identifier, event Detail, event Outcome Information, event Relation and event Trigger) were verified and acknowledged as critical elements of event history metadata. The analysis also found two (2) new elements (Maintenance History and Maintenance Event) proposed by experts that resulted in ten (10) event history metadata elements in total. The ten (10) elements verified by experts was further taken into prototype for validation purpose. The prototype was developed using PHP with MySOL database. The testing of event history metadata prototype was conducted by four (4) MGA staffs (Records Manager and Administration Officer) who created and transacted the e-records within two (2) different departments. The report generated from the prototype shows that, the ten (10) elements are proven capable to preserve the entire changes of e-records event history metadata. This result indicates the achievement of authenticity of e-records as acknowledged by those six (6) MGA staffs. The achievement of authenticity of erecords event history metadata implies that the model Preservation Electronic Records Event History Metadata (PEREHM) with it ten (10) elements resolves the issues of nonauthenticate e-records metadata useful for representing the authenticity of electronic record against legal issue.

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