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医学图像网格基于语义的信息集成方法

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Abstract

A semantic-based information integration scheme for MedImGrid (medical image grid) is presented, which creates parent-ontology (HL7-RIM ontology) based on HL7-RIM (health level 7 referenced information model), and adopts hybrid means to construct the hierarchical structure of MedImGrid global and local ontologies. The HL7 (health level 7) grid middleware is developed based on Agent and middleware technology, which gives the semantic parsing capability to HL7 intelligent Agent to support grid service encapsulation and uniform access of heterogeneous data sources. The interrelations of data modes at ontology layer are denoted with ontology tag and used to support the semantic parsing and mapping between different medical data sources referring to MedImGrid ontologies. MedImGrid prototype is based on CGSP2 (China grid support platform v2.0) and adopts global and local semantic mapping loosely coupled means, and its special layered structure makes resource sharing and matching across systems and hospitals more efficient.

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摘要

提出了一种医学图像网格MedImGrid(medical image grid)基于语义的信息集成方法.基于HL7 RIM(health level 7 referenced information model)生成父本体(HL7-RIM ontology),采用混合方式(hybrid means)建立MedImGrid全局和局部本体的分级结构.结合代理和中间件技术开发了HL7(health level 7) Grid中间件,实现了具有医疗语义解析功能的HL7智能代理,以支持对异构数据源的Grid Service封装与统一访问.基于本体标记表达异构数据模式的语义模型在本体层的相关关联,参照MedImGrid各级本体实现数据源间的语义解析和映射.MedImGrid原型系统基于CGSP2(China grid support platform v2.0),采用了局部与全局语义映射松耦合的构架,其特有的层次结构使得网格环境下跨系统/医院的信息集成更加有效.

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