





















- [8] Drools Expert: [https://docs.jboss.org/drools/release/5.5.0.Final/drools-expert-docs/html\\_single/](https://docs.jboss.org/drools/release/5.5.0.Final/drools-expert-docs/html_single/)
- [9] Pellet Reasoner: <https://github.com/complexible/pellet>
- [10] L. Mainetti, V. Mighali, L. Patrono, P. Rametta: *A novel Rule-based Semantic Architecture for IoT Building Automation Systems*, The 23rd Int. Conf. on Software, Telecommunications and Computer Networks, SoftCOM 2015, Split (Croatia), Sept. 16-18, 2015
- [11] Chui Yew Leong, A.R. Ramli, T. Perumal: *A rule-based framework for heterogeneous subsystems management in smart home environment*, Consumer Electronics, IEEE Transactions on , vol.55, no.3, pp.1208,1213, August 2009.
- [12] S.R. Bhandari, N.W. Bergmann: *An Internet-of-Things system architecture based on services and events*, Intelligent Sensors, Sensor Networks and Information Processing, 2013 IEEE 18th Int. Conf. on , vol., no., pp.339,344, 2-5 April 2013
- [13] V. Huang, M.K. Javed: *Semantic Sensor Information Description and Processing*, Sensor Technologies and Applications, 2008. SENSORCOMM '08. 2nd Int. Conf. on , vol., no., pp.456,461, 25-31 Aug. 2008.
- [14] Feng Wang, Kenneth J. Turner: *An Ontology-Based Actuator Discovery and Invocation Framework in Home Care Systems*, in Proc. 7th Int. Conf. on Smart Homes and Health Telematics, pp. 66-73, LNCS 5597, Springer, Berlin, June 2009
- [15] R. Shojanoori, R. Juric, M. Lohi, G. Terstyanszky: *ASeCS: Assistive Self-Care Software Architectures for Delivering Service in Care Homes*, System Sciences (HICSS), 2014 47th Hawaii Int. Conf. on , vol., no., pp.2928,2937, 6-9 Jan. 2014
- [16] S.N. Han, Gyu Myoung Lee, N. Crespi: *Semantic Context-Aware Service Composition for Building Automation System*, Industrial Informatics, IEEE Transactions on , vol.10, no.1, pp.752,761, Feb. 2014
- [17] Hoan-Suk Choi, Jun-Young Lee, Na-Ri Yang, Woo-Seop Rhee: *User-centric service environment for context aware service mash-up*, Internet of Things (WF-IoT), 2014 IEEE World Forum on , vol., no., pp.388,393, 6-8 March 2014.
- [18] Friend Of A Friend (FOAF) Vocabulary Specification: <http://xmlns.com/foaf/spec/>
- [19] Time Ontology in OWL: <http://www.w3.org/TR/owl-time/>
- [20] The Timeline Ontology: <http://motools.sourceforge.net/timeline/timeline.html>
- [21] SWRL Temporal Ontology: <http://protege.cim3.net/cgi-bin/wiki.pl?SWRLTemporalOntology>
- [22] SWRL Temporal Built-ins: <http://protege.cim3.net/cgi-bin/wiki.pl?SWRLTemporalBuiltIns>
- [23] Valid-Time Temporal Model: <http://protege.cim3.net/cgi-bin/wiki.pl?ValidTimeTemporalModel>
- [24] I. Roussaki, M. Strimpakou, N. Kalatzis, M. Anagnostou, C. Pils: *Hybrid context modeling: a location-based scheme using ontologies*, in Pervasive Computing and Communications Workshops, 2006. PerCom Workshops 2006. Fourth Annual IEEE International Conference on , vol., no., pp.6 pp.-7, 13-17 March 2006
- [25] oneM2M Base Ontology Draft: <http://www.onem2m.org/technical/latest-drafts>
- [26] Semantic Sensor Network (SSN) Ontology: <http://www.w3.org/2005/Incubator/ssn/ssnx/ssn>
- [27] oneM2M Specifications: <http://www.onem2m.org/technical/published-documents>.
- [28] OSGi Alliance: <http://www.osgi.org/Main/HomePage>
- [29] Apache ServiceMix: <http://servicemix.apache.org/>
- [30] Apache ACE: <https://ace.apache.org/>
- [31] OSGi Extender Pattern: <http://blog.osgi.org/2007/02/osgi-extender-model.html>



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