A Process-Aware IoT Application Execution Environment Design

Minjae Park*, Hyunah Kim**, Hyun Ahn**, Kwanghoon Pio Kim**

*Department of Computer Software, Daelim University, South Korea

**Department of Computer Science, Kyonggi University, South Korea

mjpark@daelim.ac.kr, {hyuna486, hahn, kwang}@kgu.ac.kr

***Abstract*— Process-based application-driven environments are becoming very diverse. As IoT-based application implementations are widely used, an execution environment that can run IoT devices is needed. We typically build a program-driven operating environment, but we want to run those applications or services on a process-based basis. Therefore, we design a process-based IoT application execution environment that binds such a running application.**

***Keyword*— Process-Aware IoT Application, Workflow, BPM**

Minjae Park is an assistant professor of computer software at Daelim University, South Korea. He received B.S., M.S., and Ph.D. degrees in computer science from Kyonggi University in 2004, 2006, and 2009, respectively. His research interests include groupware, workflow systems, BPM, CSCW, collaboration theory, process warehousing and mining, workflow-supported social networks discovery and analysis, process-aware information systems, data intensive workflows, and process-driven Internet of Things and process-aware factory automation systems.

Hyunah Kim is an adjunctive professor and a faculty member of the collaboration technology research laboratory in the department of computer science at Kyonggi University, South Korea. She received her B.S. degree in computer science from Korea Nazarene University in 2001. Also, she received her M.S. and Ph.D. degrees in computer science from Kyonggi University in 2003 and 2009, respectively. Her research interests include workflow systems, SCORM-based e-Learning process models, BPM, BPI, ACM, workflow-supported social networks discovery and analysis, and process-aware Internet of Things.

Hyun Ahn is a research professor of computer science department at Kyonggi University, South Korea. He received B.S., M.S., and Ph.D. degrees in computer science from Kyonggi University in 2011, 2013, and 2017, respectively. His research interests include workflow systems, BPM, business process intelligence, process mining.

Kwanghoon Pio Kim is a full professor of computer science department and the founder and supervisor of the collaboration technology research laboratory at Kyonggi University, South Korea. He received B.S. degree in computer science from Kyonggi University in 1984. And he received M.S. degree in computer science from Chungang University in 1986. He also received his M.S. and Ph.D. degrees from the computer science department at University of Colorado Boulder, in 1994 and 1998, respectively. He had worked as researcher and developer at Aztek Engineering, American Educational Products Inc., and IBM in USA, as well as at Electronics and Telecommunications Research Institute (ETRI) in South Korea. In present, he is a vice-chair of the BPM Korea Forum. He has been in charge of a country-chair (Korea) and ERC vice-chair of the Workflow Management Coalition. He has also been on the editorial board of the journal of KSII, and the committee member of the several conferences and workshops. His research interests include groupware, workflow systems, BPM, CSCW, collaboration theory, Grid/P2P distributed systems, process warehousing and mining, workflow-supported social networks discovery and analysis, process-aware information systems, data intensive workflows, and process-driven Internet of Things.