



SS2018 – Component-based Software Engineering

Implementing Component-Based Systems–Part II

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Task 1 Implementation of the Factory Automation Application with rOSGi

So far, we have only implemented local components. In real scenarios, multiple distributed systems will have to interact. Traditionally, the production system of a company will run on a different server than the Customer Relation Management (CRM) system. Complete the previous OSGi application to a complete CRM. Then implement a second OSGi application that provides a rudimentary implementation of the described production system in a simulated environment. Consider at least one printing and one finishing machine (including the robot arms and the mobile robots). Connect the two systems using *Remote Services for OSGi* denoted rOSGi [1].¹

Note: You can work in groups of up to five students.

- a) Complete the previous OSGi application to a complete CRM.
- b) Implement the production system as a standalone OSGi application.
- c) Implement the rudimentary components to handle production processes (including at least two machines, two robot arms and two mobile robots).
- d) Implement a small simulation for the communication between those components.
- e) Connect the CRM system to the production system using rOSGi.
- f) Prepare a short presentation and demo (maximum 5 minutes)!

References

- [1] Jan S Rellermeyer, Gustavo Alonso, and Timothy Roscoe. R-osgi: distributed applications through software modularization. In *ACM/IFIP/USENIX International Conference on Distributed Systems Platforms and Open Distributed Processing*, pages 1–20. Springer, 2007.

¹<http://r-osgi.sourceforge.net>