

Master 2018

Ms. Suhitha Dandu

**Development of Adaptive Communication Framework using Publish/
Subscribe Model.**

ABSTRACT - Masterthesis

The advancement in digitalization and interconnections in modern communication systems are a result of rapidly changing environments. An effective and efficient interaction between various industrial systems has been an increasing demand in the industrial environment. With the existing technologies, interactions in distributed systems consist of several million processes scattered across the network allowing data losses and unreliable communications. To reduce these complexities, new approaches are required.

This work mainly involves various conceptual networking and communication models to establish a secure and reliable communication medium, where information exchange is robust, fast and asynchronous. In addition, different factors like data integrity, reliability and flexibility will be determined and established within the medium. The existing communication paradigms such as Open Systems Interconnection (OSI), Internet Protocol Suite (TCP/IP), and publish/subscribe model are studied and analyzed.

This thesis aims to provide a flexible distributed framework to optimize communication services between various autonomous systems in the network, using publish/subscribe paradigm. The publish/subscribe paradigm standards that include decoupling, and message-oriented interactions will be implemented. With these entities, the complexity, deployment and transmission time shall be reduced. This framework expects to present an integrated solution for real-time and reliable communications, emphasizing the importance of communication entities in industry 4.0.