

## **Abstract**

The work presented in this document addresses the problems in the domain of integrating applications, developed at different instants on time, by different teams, which need to be integrated to enrich the business processes. The integration of application needs to be opaque to the applications, being provided by generic software that is robust and without costs to the developers in the integration moment. This integration needs to enable the use of the desired protocols by the different applications. The current work proposes a message-oriented-middleware as the solutions for the identified problem.

The solution presented by this work provides the communication between applications using different protocols and also provides the decoupling in time, space and synchronism of communication among applications. The solution implementation is based in a publish/subscribe content oriented system and has to handle the computational demands of this type of system, being that the use of this type of system is justified by the enrichment of subscription of events semantics. This implementation uses a semi-distributed architecture with the objective of enabling the scalability of the system. The use of the semi-distributed architecture implies that the solution implementation has to handle the routing of subscriptions and the forwarding of events through the event servers.

The solution implementation provides guaranties of persistence, transactional processing and fault tolerance. The transformation of events between the different protocols types is also provided.

The extensibility of the solution is obtained by the plugins system that enables the addition of the support to new communication protocols. The protocols supported by the final implementation of this work are **RestMS** and **TCP**.

Keywords: **Integration, Message-Oriented-Middleware, Protocols, Publish/Subscribe, Routing, Transformation**



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**Sistemas de Informação**

# **Message Integration Bus**

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PROJECTO PARA OBTENÇÃO DO GRAU DE MESTRE EM ENGENHARIA  
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