



# Towards an MDA-Oriented UML Profile for Distribution

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# Towards an MDA-Oriented UML Profile for Distribution

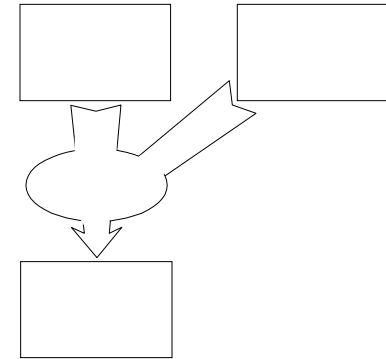
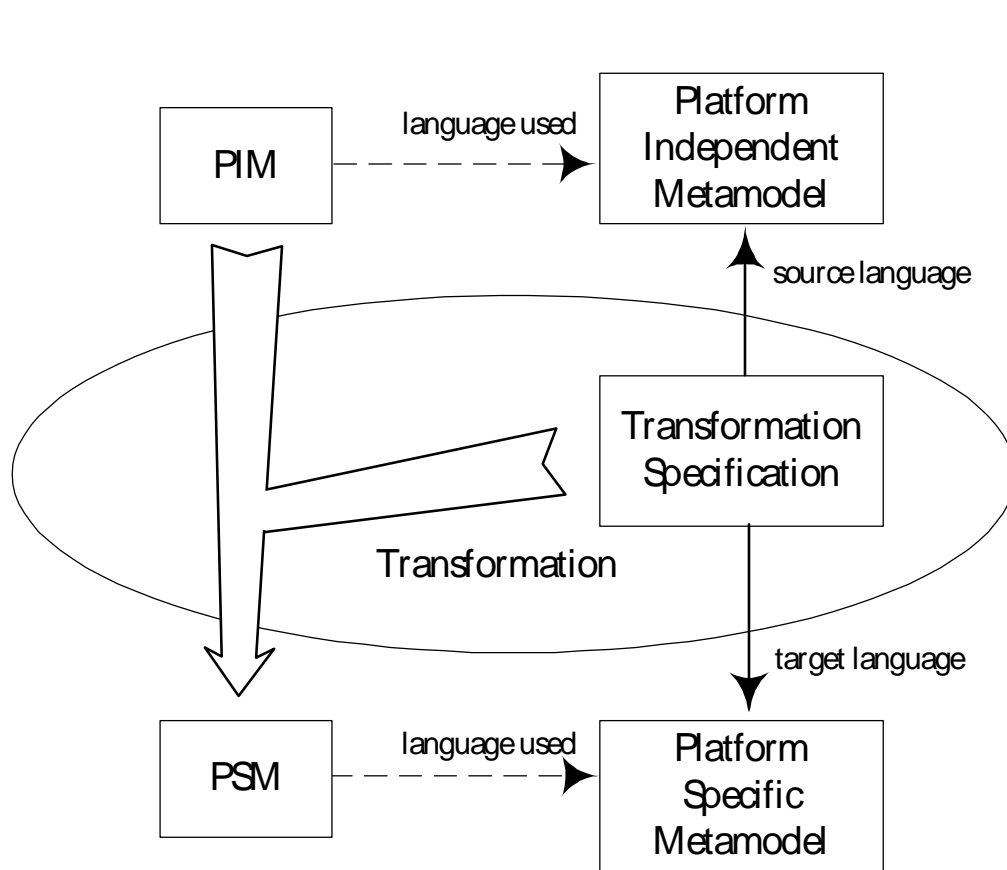
- Presentation out of an accepted paper for the next EDOC conference

Silaghi, R.; Fondement, F.; Strohmeier, A.: *Towards an MDA-Oriented UML Profile for Distribution*. Proceedings of the 8th IEEE International Enterprise Distributed Object Computing Conference, EDOC, Monterey, CA, USA, September 20-24, 2004. IEEE Computer Society, 2004 (to appear). Also available as Technical Report, N° IC/2004/49, Swiss Federal Institute of Technology in Lausanne, Switzerland, May 2004.

# Contents

- On MDA and Platforms
- Layered Platforms
- Platform Integration
- Conclusion

# MDA Overview : The Y Pattern



- Can be iterative
  - More than one platform
  - Refinement steps
    - CIM->PIM
- Many other possibilities

© Object Management Group, Inc.: *MDA Guide*, V 1.0.1. omg/03-06-01

# Platform

Platform description model (PDM):

- Domain-specific **metamodel**
- Domain-specific **profile**
  - *Stereotypes, Tag Definitions and Constraints*

Platform and technology

- Technology-Independent PDM  
vs. Technology-Dependent PDM
- Platforms **layers**

Platform integration

- Guiding the transformation: **“Wizard”** approach

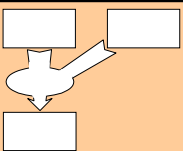
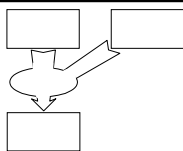
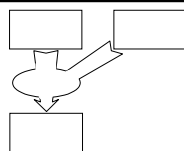
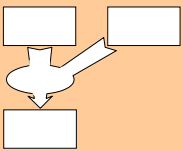
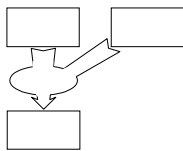
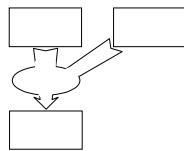
# Platform: Middleware

- UML as a system modelling notation
- Profiles as a platform modelling notation

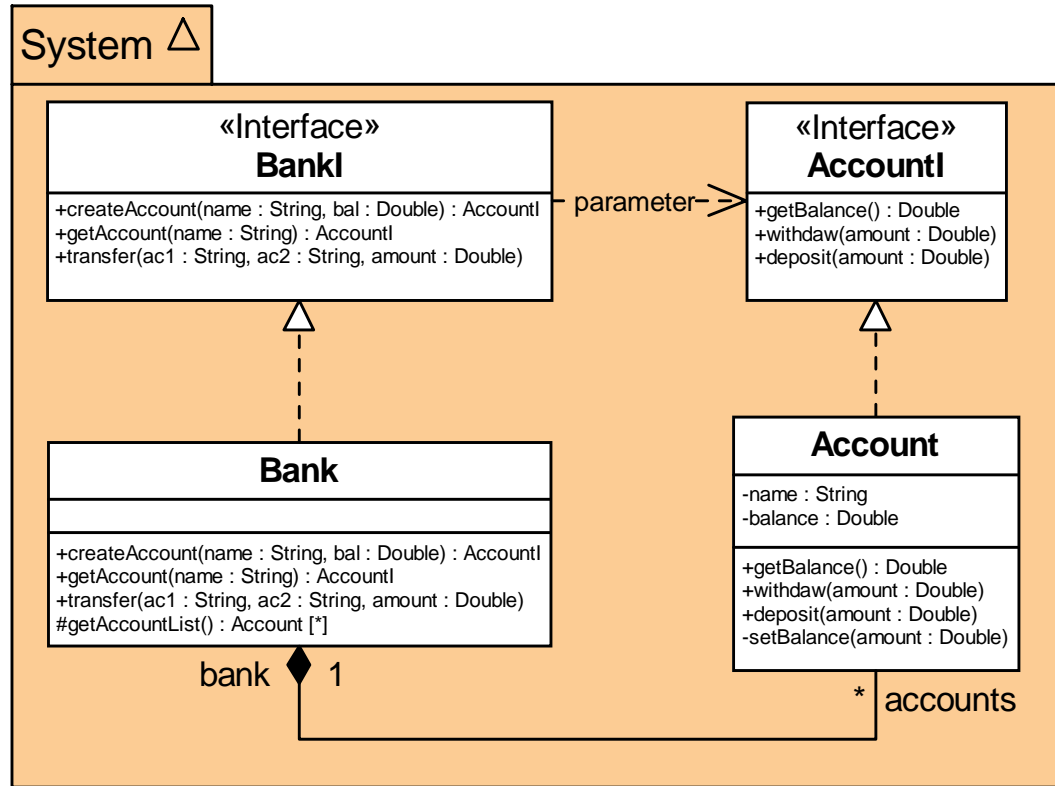
Distribution	Concurrency	Transactions
What is remotely available in the system, and how to communicate?	What are the behaviours that cannot execute together ?	What are atomic behaviours ?
How to reach distributed elements with CORBA ?	What are the locks to place in CORBA ?	What CORBA transactional element ?

# Platform: Middleware

- UML as a system modelling notation
- Profiles as a platform modelling notation

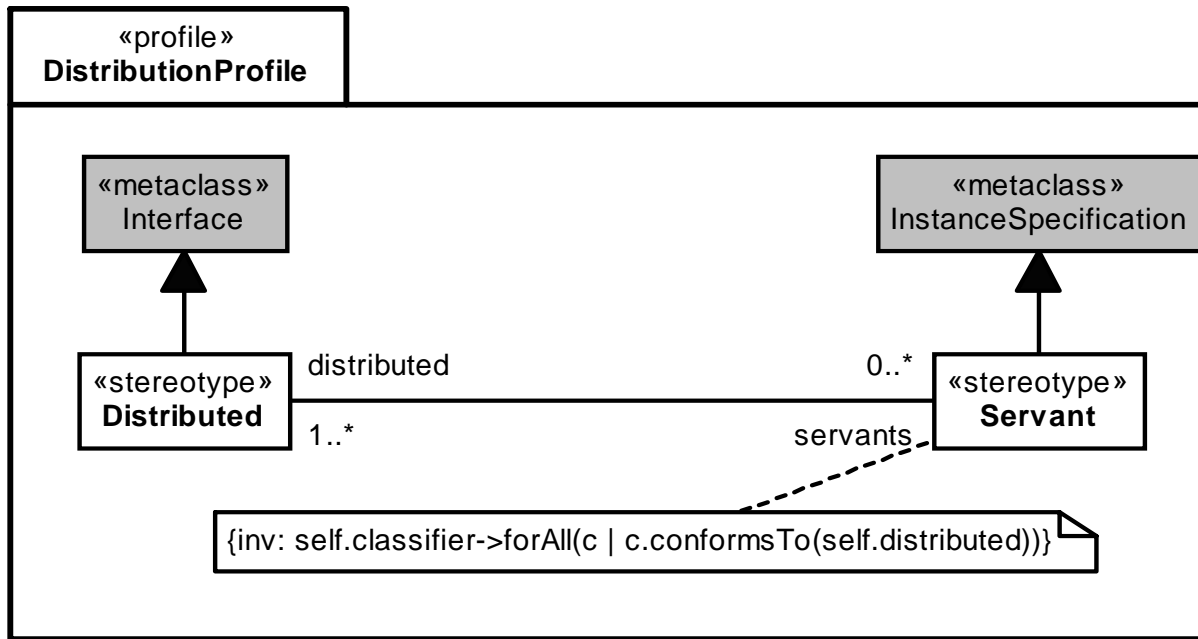
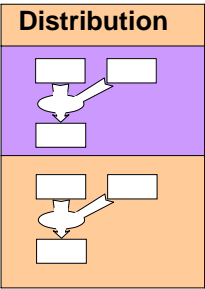
Distribution	Concurrency	Transactions
		
		

# An example



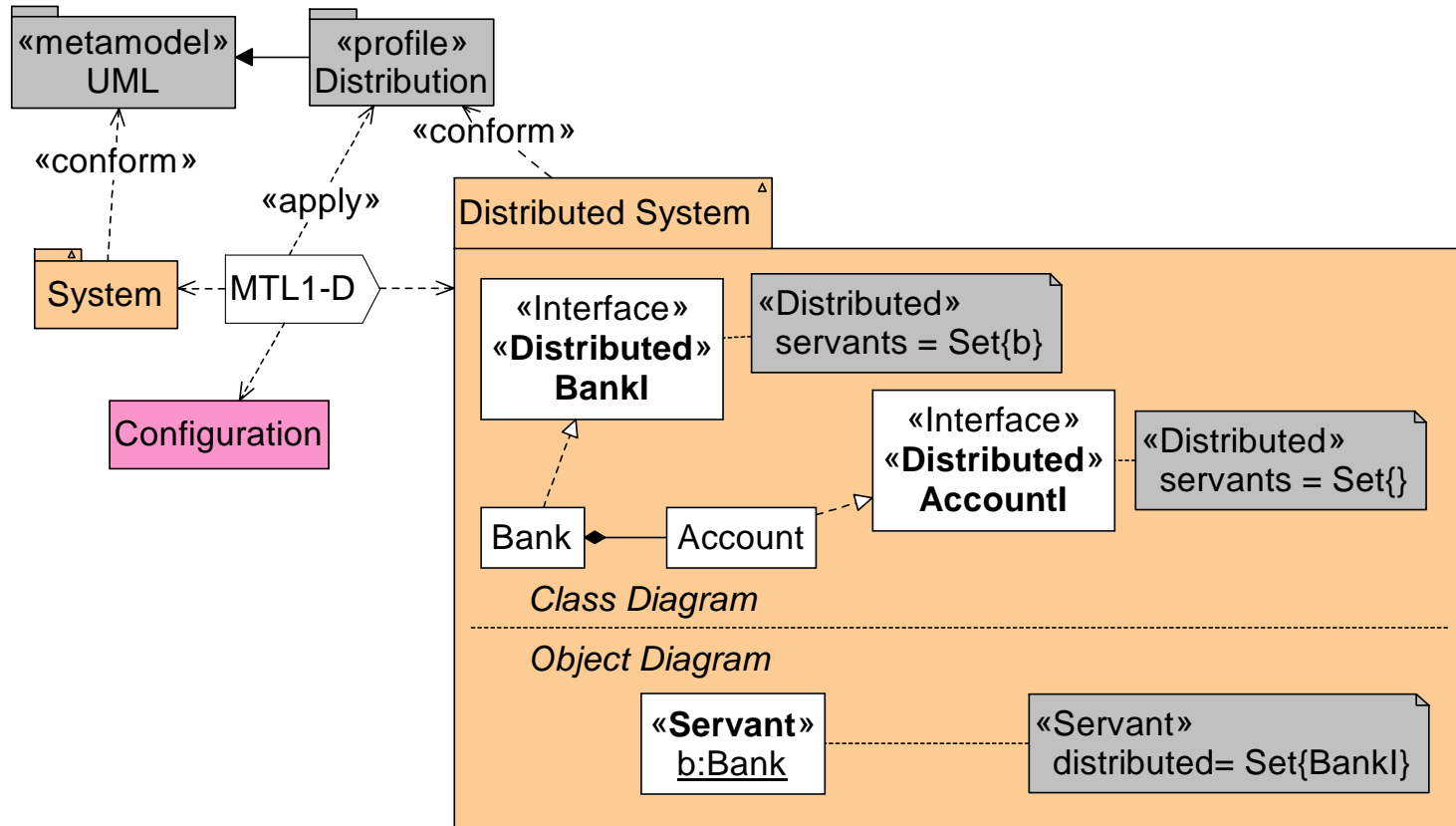
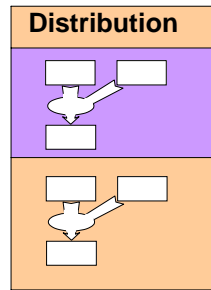


# Distribution Profile

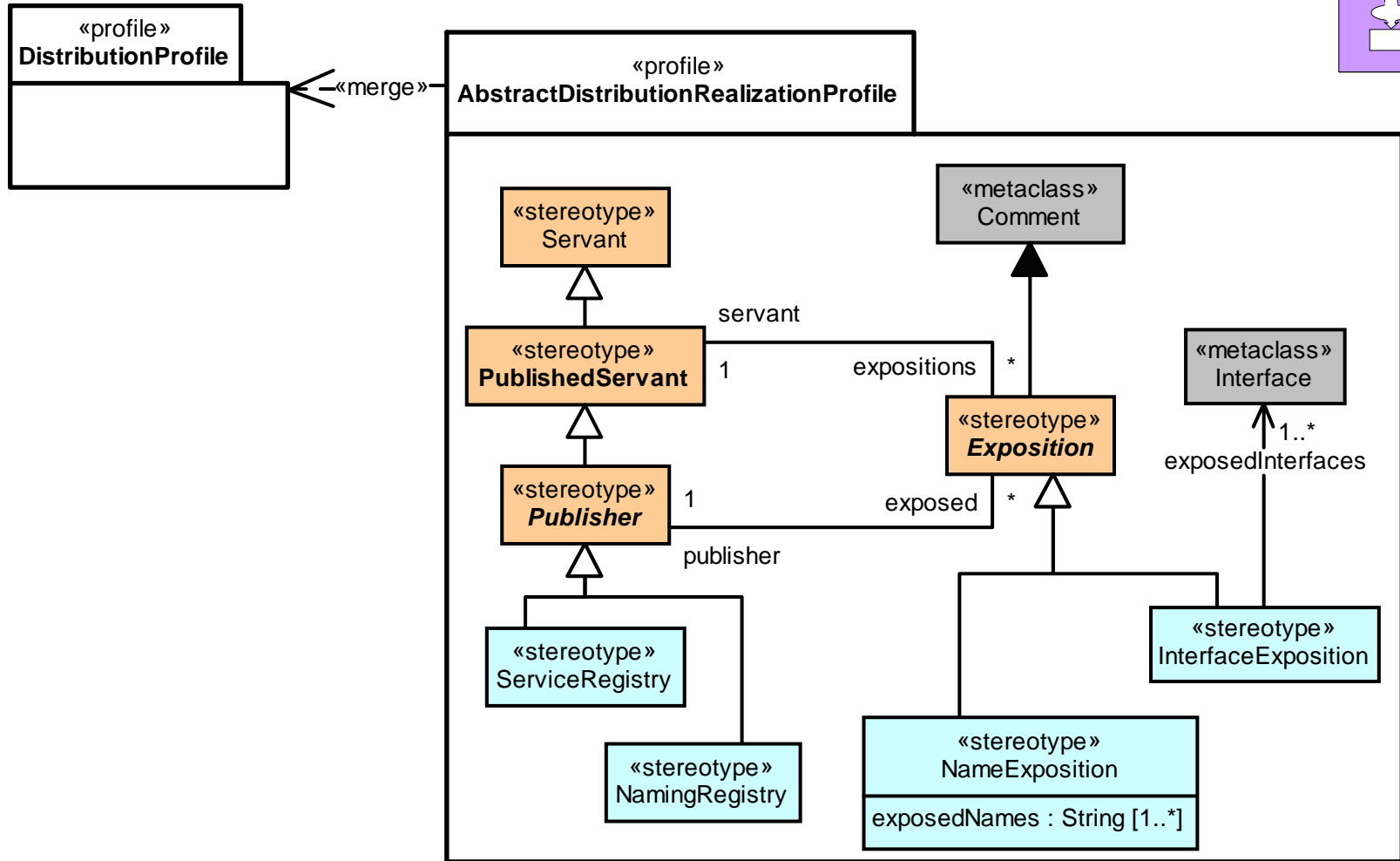
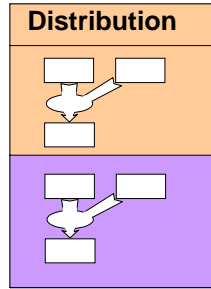


# Platform integration

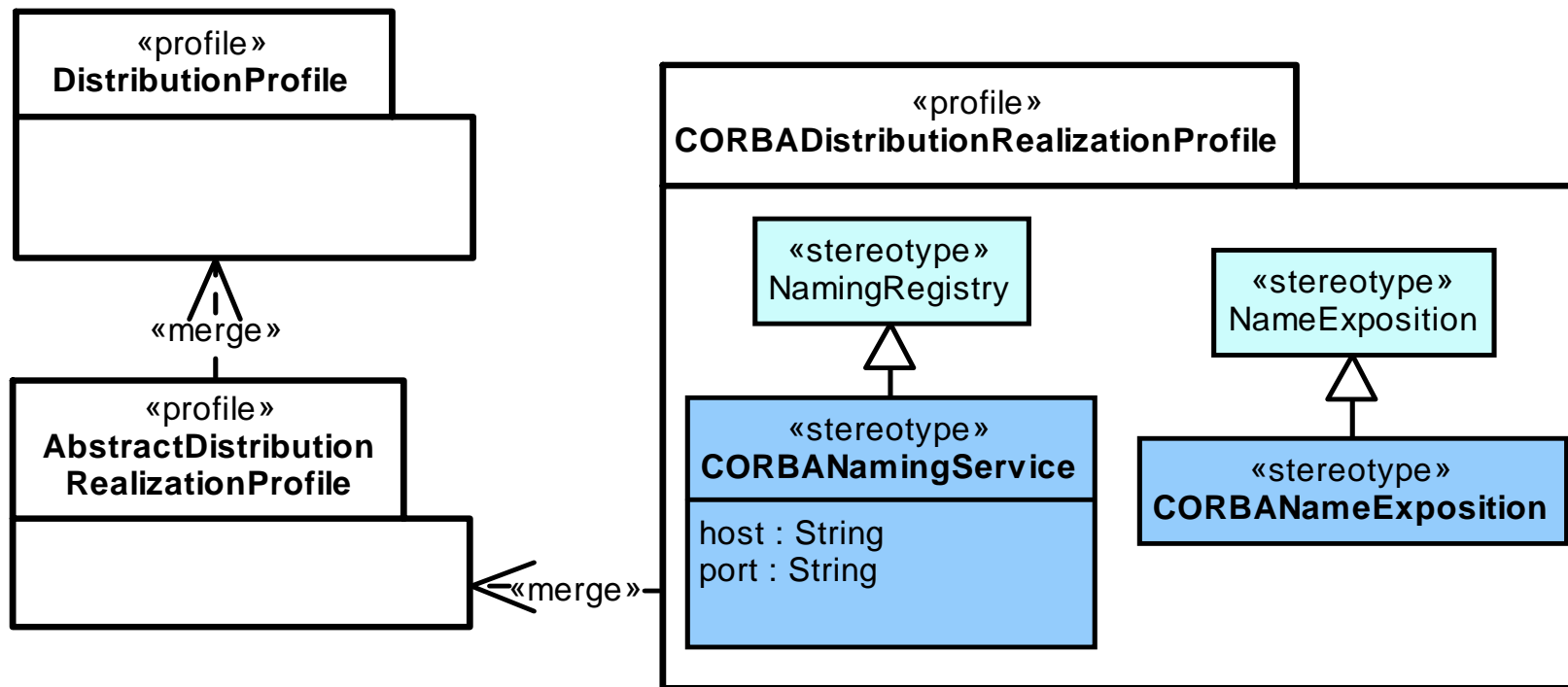
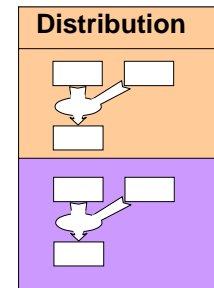
- “The Bank is distributed”



# Abstract Distribution Realization

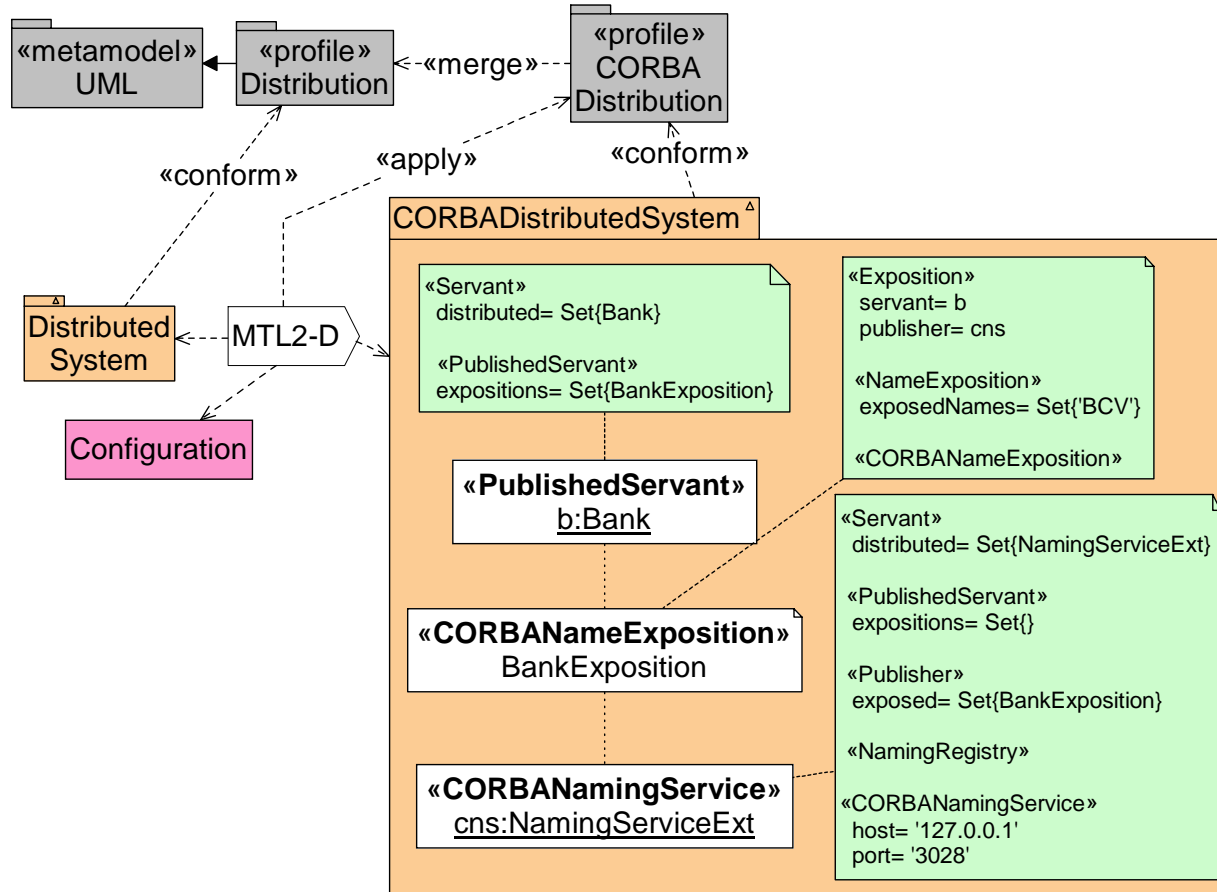
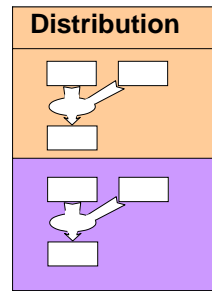


# CORBA Distribution Realization

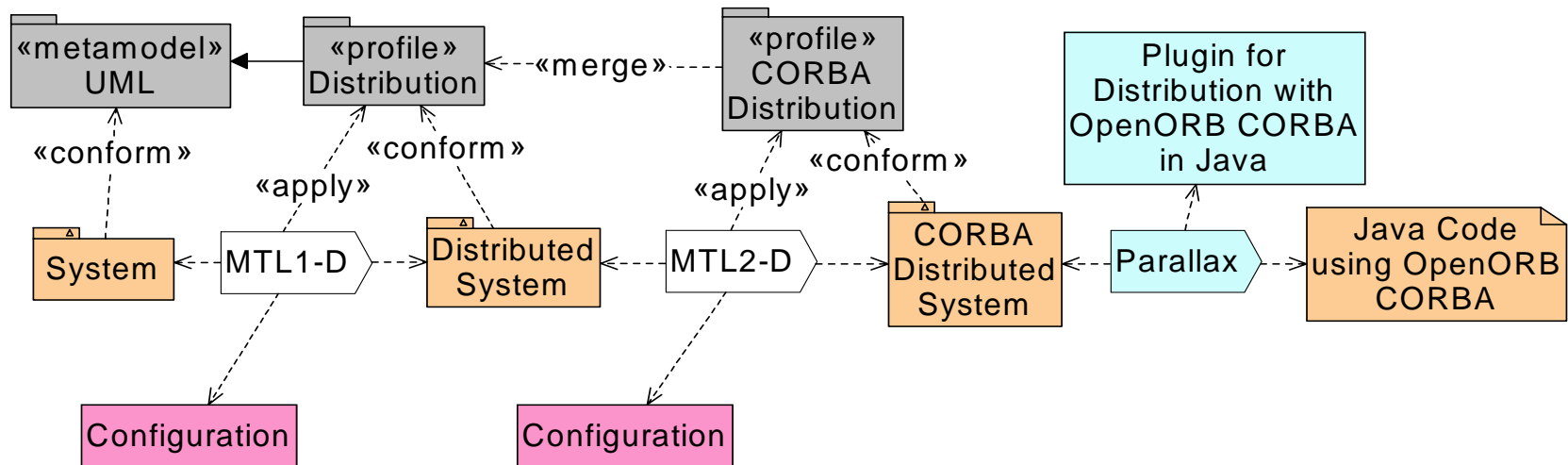
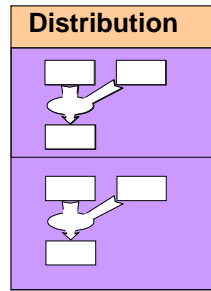


# Platform integration

- “The b servant is bound to a CORBA naming service at 127.0.0.1, on port 3028, with name BCV”



# Platform integration



# Conclusion

- Platform separated into Concerns
- Concerns refined into Technologies
- Final support: extensible code generator
  
- “Wizard” model transformation for integrating platforms
  
- TBD:
  - More case studies
  - More technologies
  - More concerns
  - More platforms
  - More platform modelling languages
  - More system modelling languages