Applying Model Driven Architecture (MDA) to Radar Systems

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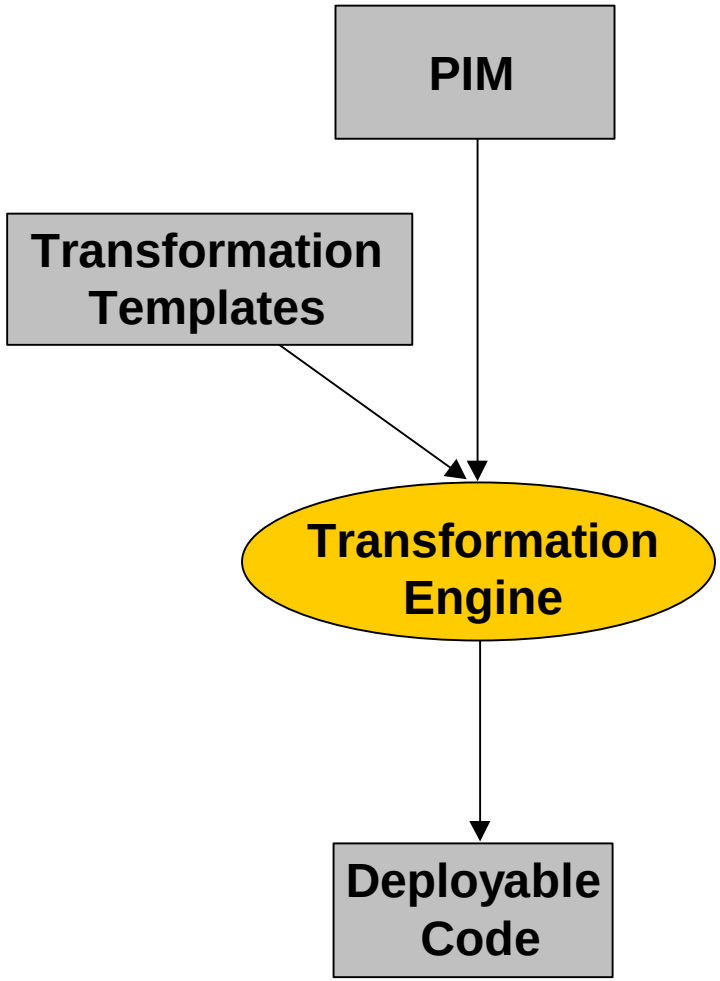
What is Model Driven Architecture?

- **Develop a Platform Independent Model (PIM) representing the application**
  - **Use the Unified Modeling Language (UML) for model**
  - **Platform can include:**
    - **Operating System**
    - **Programming Language**
    - **Hardware (including topology)**
    - **Communication mechanisms**
- **Transform the PIM into deployable source code**
  - **Meets real-time embedded (RTE) performance requirements necessary for radar software**

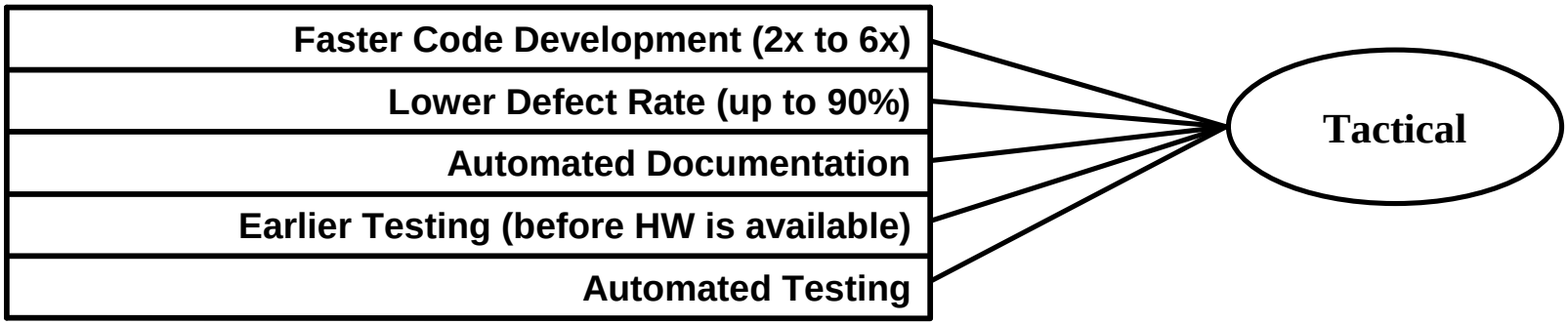


Separation of application from mapping to target hardware is powerful

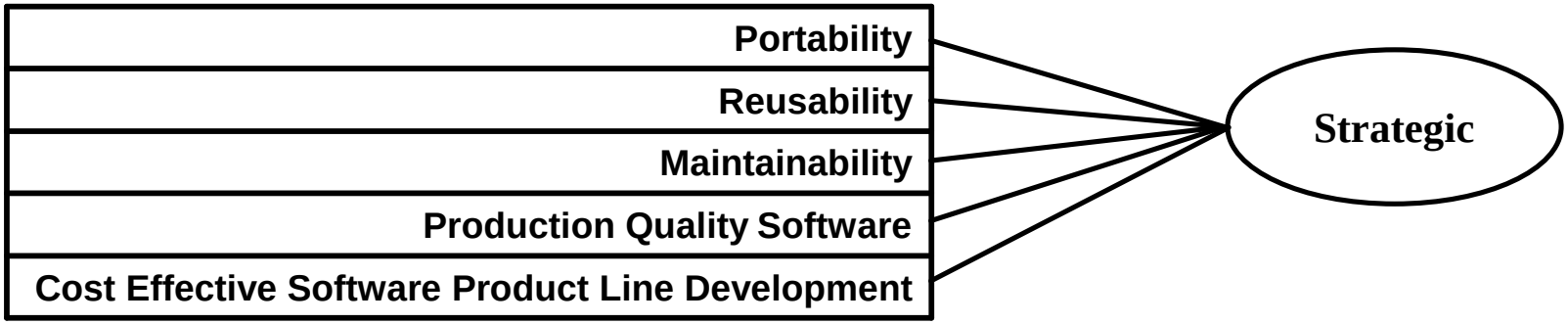
MDA Benefits Realized by Raytheon

Raytheon Pathfinder Solutions

Short-term Benefits



Long-term Benefits



MDA gave us portable models, generating high quality code faster

Pathfinder Solutions and PathMATE MDA Tool Set

- **PathMATE tool set offers proven implementation patterns formalized in transformation templates and RTE open source run-time libraries**
- **Templates can be modified by Raytheon engineers to satisfy:**
  - **Radar domain specific patterns**
  - **Platform specific performance enhancements**
- **Consultants with:**
  - **MDA experience**
  - **Strong RTE experience**
  - **Radar experience**
  - **DoD clearances**

PathMATE toolset delivers flexibility necessary for RTE systems