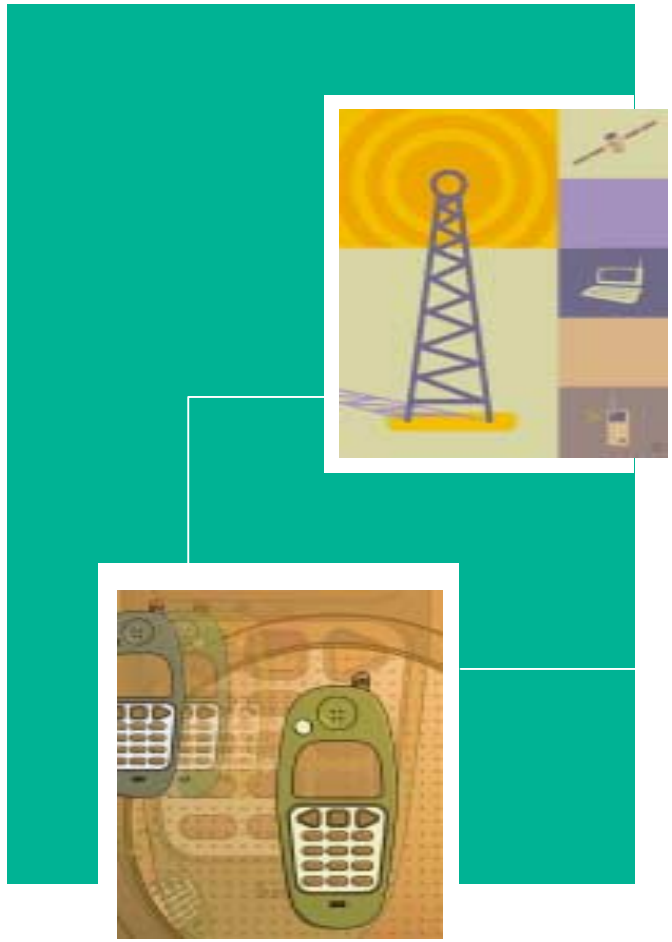
End-to-End Reconfigurability

An Integrated Project in European Union's 6th Framework Program



EVOLUTION ON RECONFIGURATION METAMODEL

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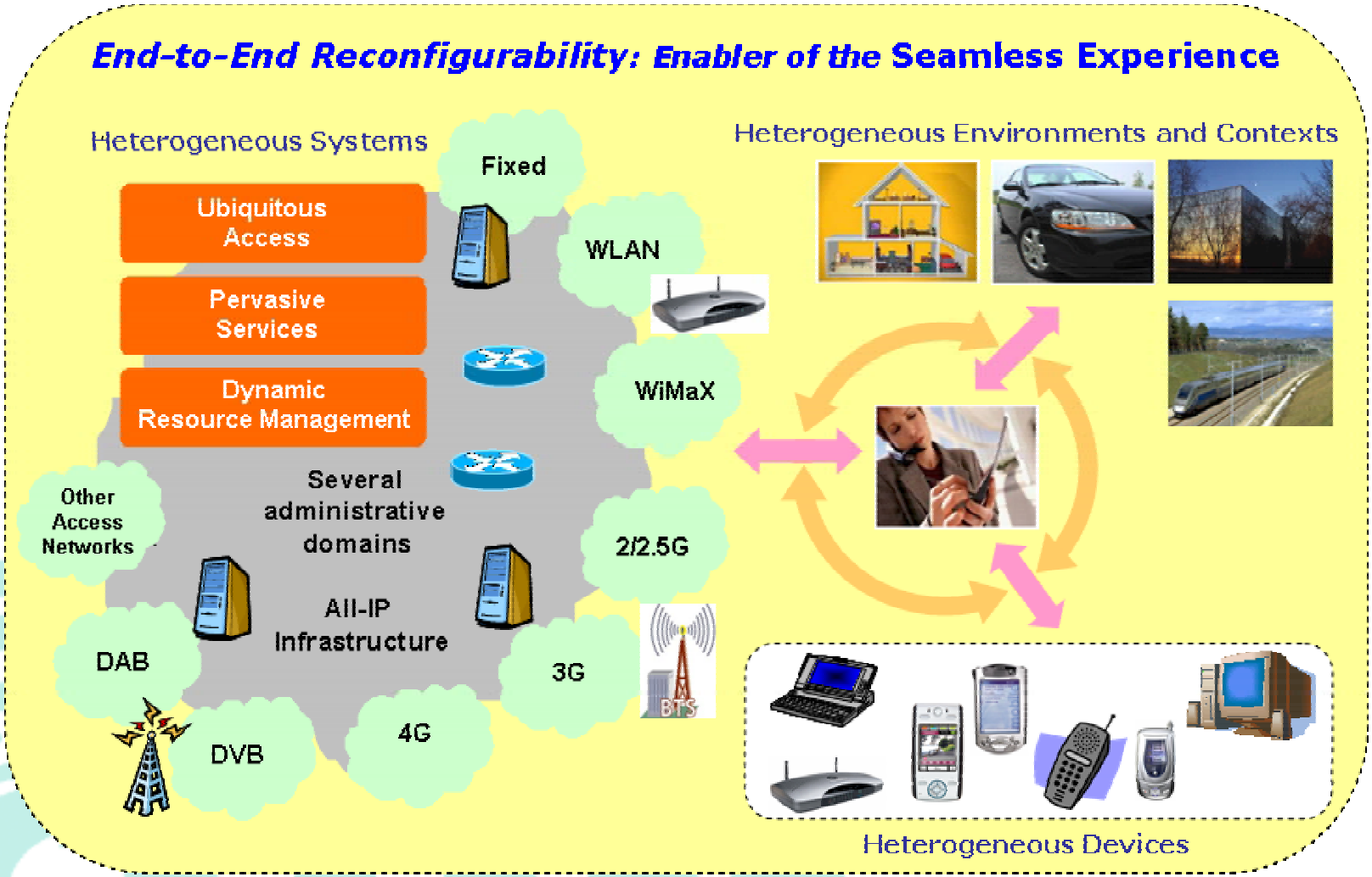
- Beyond 3G (B3G) Systems



End-to-End Reconfigurability

The **End-to-End Reconfigurability (E²R)** research project envisages:

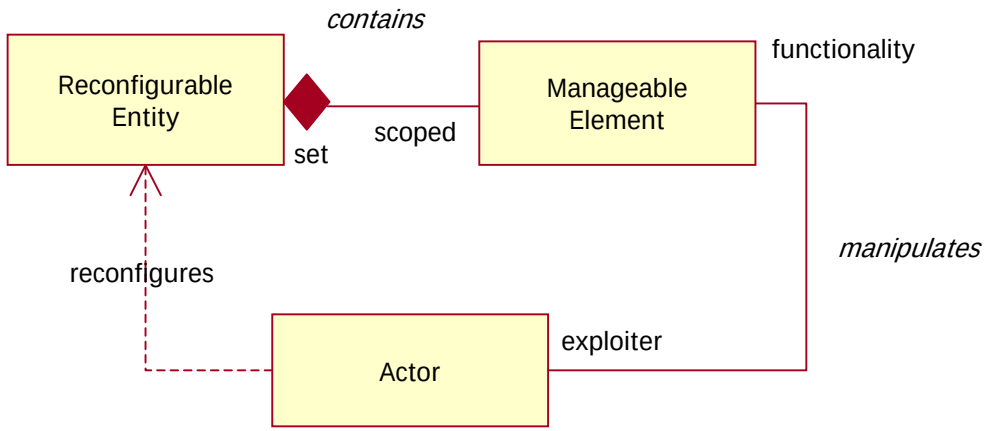
- Composite Reconfigurable Radio Networks coupled with:
  - Architectures for the introduction and support of Reconfigurable systems and Networks and Cognitive Systems Beyond 3G paradigm
  - Simpler and Flexible architectures for the support of reconfigurability in all layers, cognitive and autonomic communications, as well as adaptable service offerings
- Architectures and functionality for **R**econfiguration **M**anagement and **C**ontrol

- **Metamodel** (PIM) for describing the associations and stereotypes between reconfigurable entities

- Proposed **Model** (PSM) for Reconfiguration (**R**econfiguration **M**anagement **M**odel)

- Implemented reconfiguration scenarios (UML sequence Diagrams)
  - **Patch-upgrade scenario**
  - **Protocol Reconfiguration scenario**
  - **RAT-discovery scenario**

Basic Reconfiguration Schema

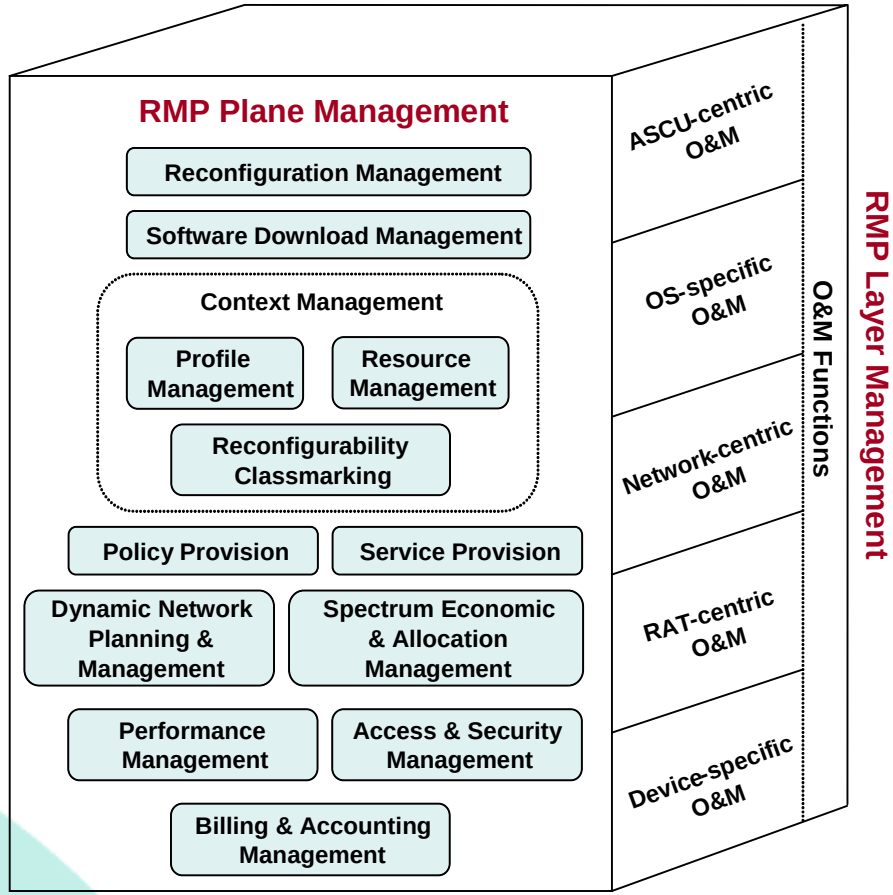


An *Actor* reconfigures a *ReconfigurableEntity*, which consists of a certain number of discrete *ManageableElements*. The Actor manipulates each of the ManageableElements, thus exploiting their functionality.

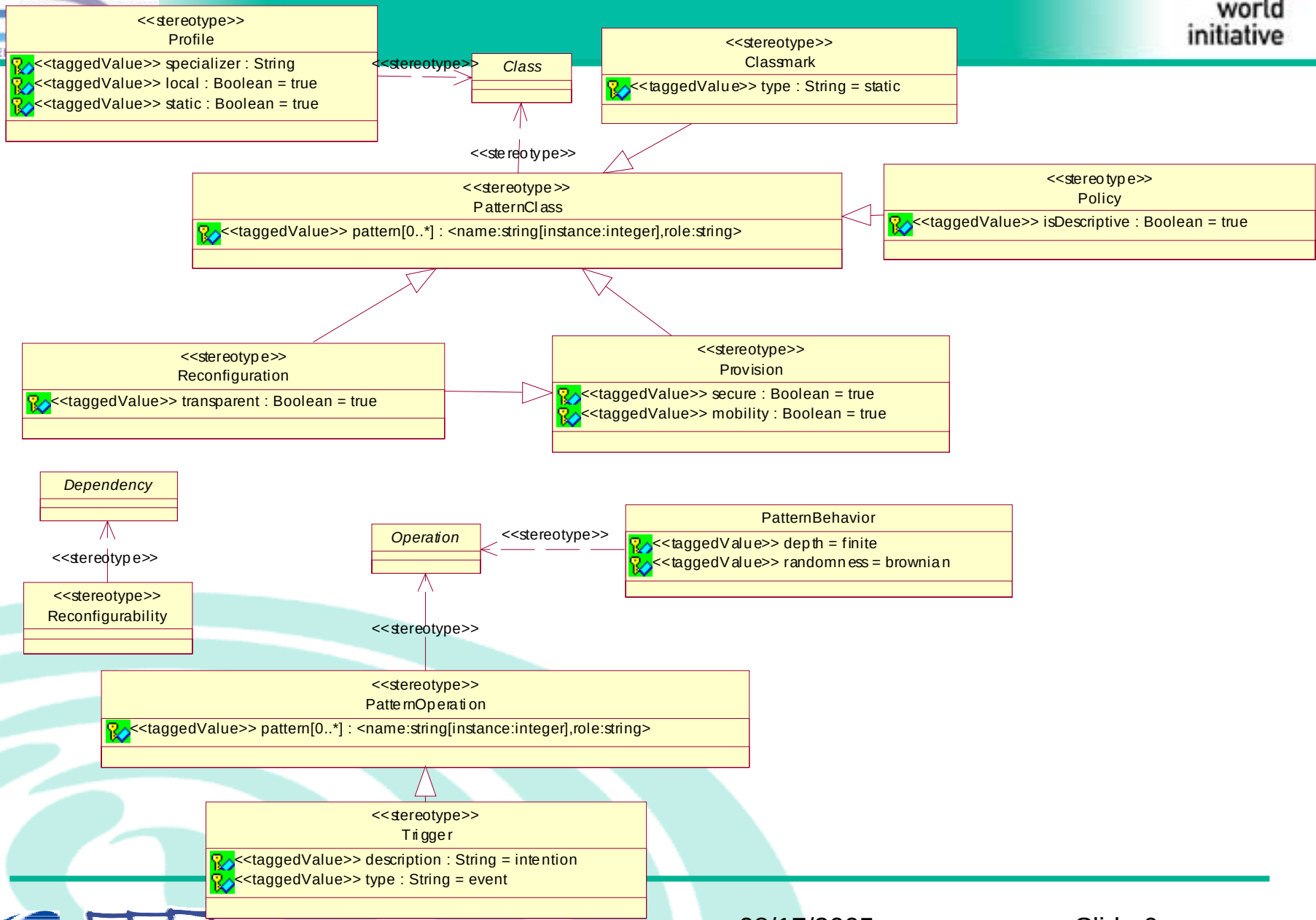
Reconfiguration Management Plane (RMP)

The **RMP** modules cater for:

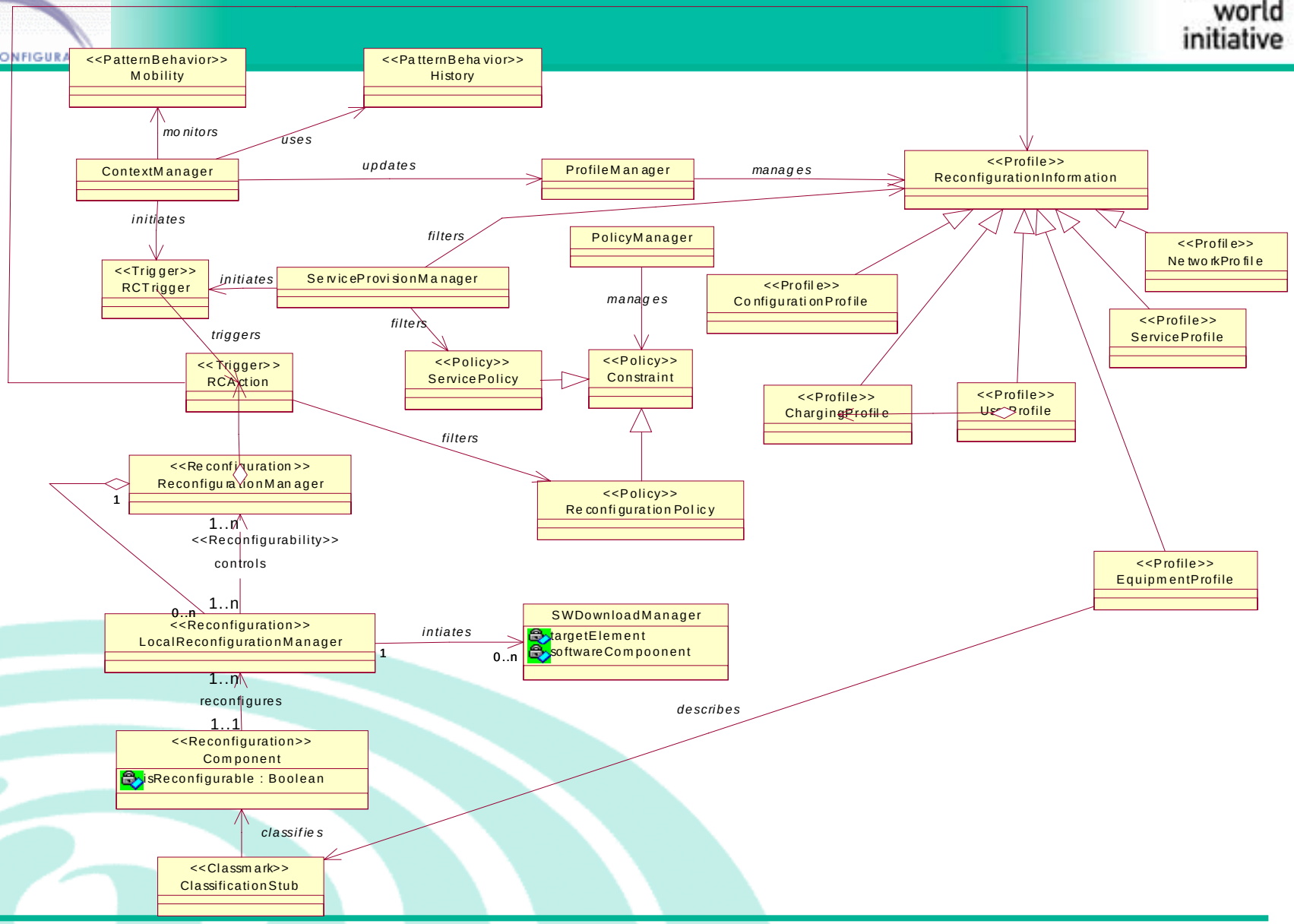
- Reconfiguration Management
- Software Download Management
- Context Management
- Policy Provision
- Service Provision
- Dynamic Network Planning/Management
- Spectrum Economic
- Performance Management
- Access and Security Management
- Billing/Accounting Management



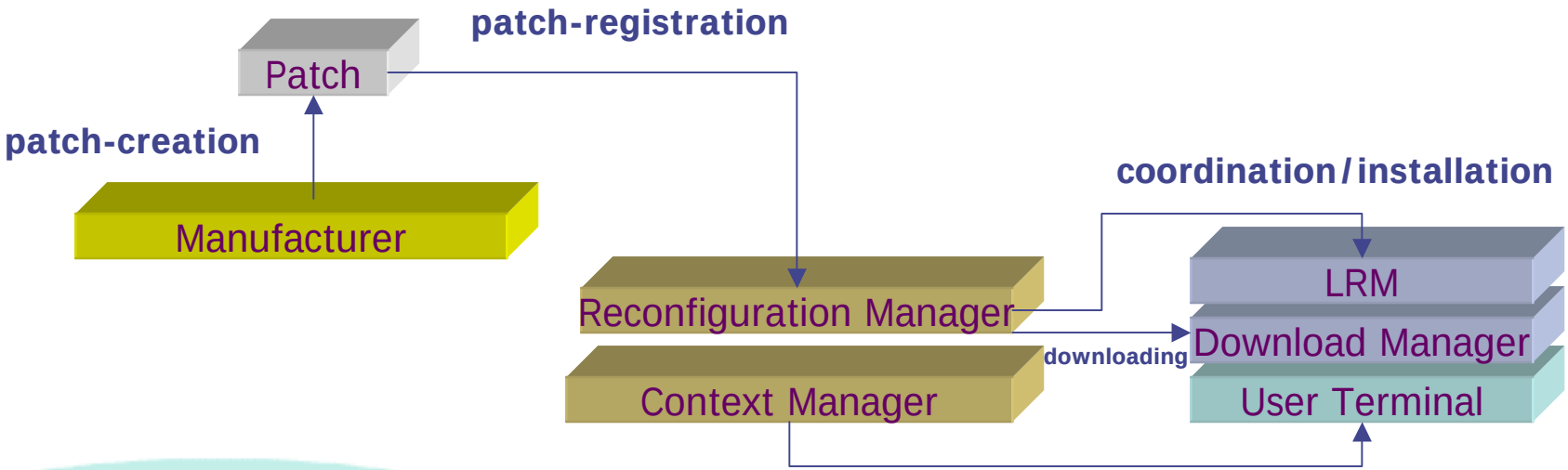
Reconfiguration Metamodel



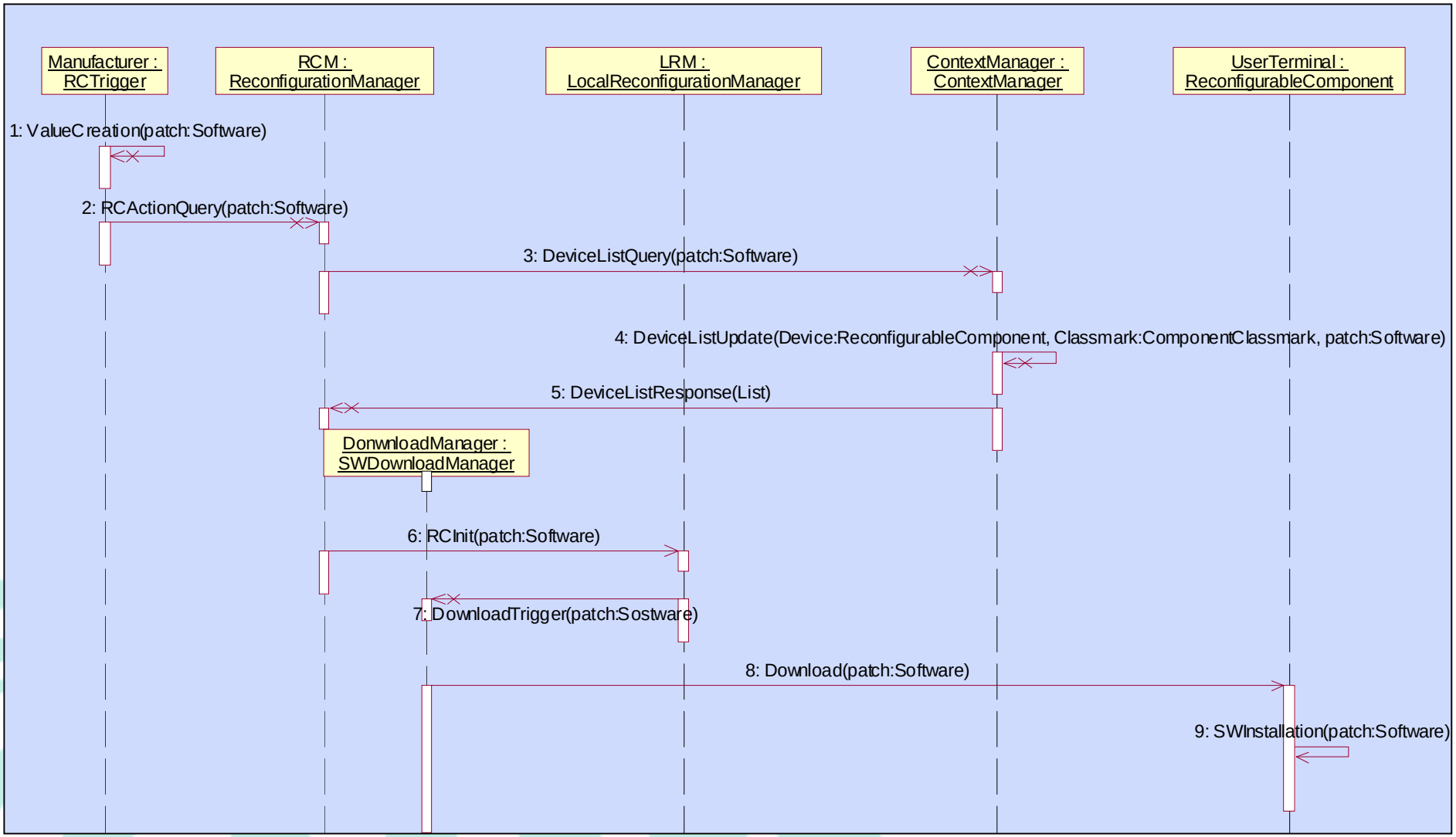
Reconfiguration Model



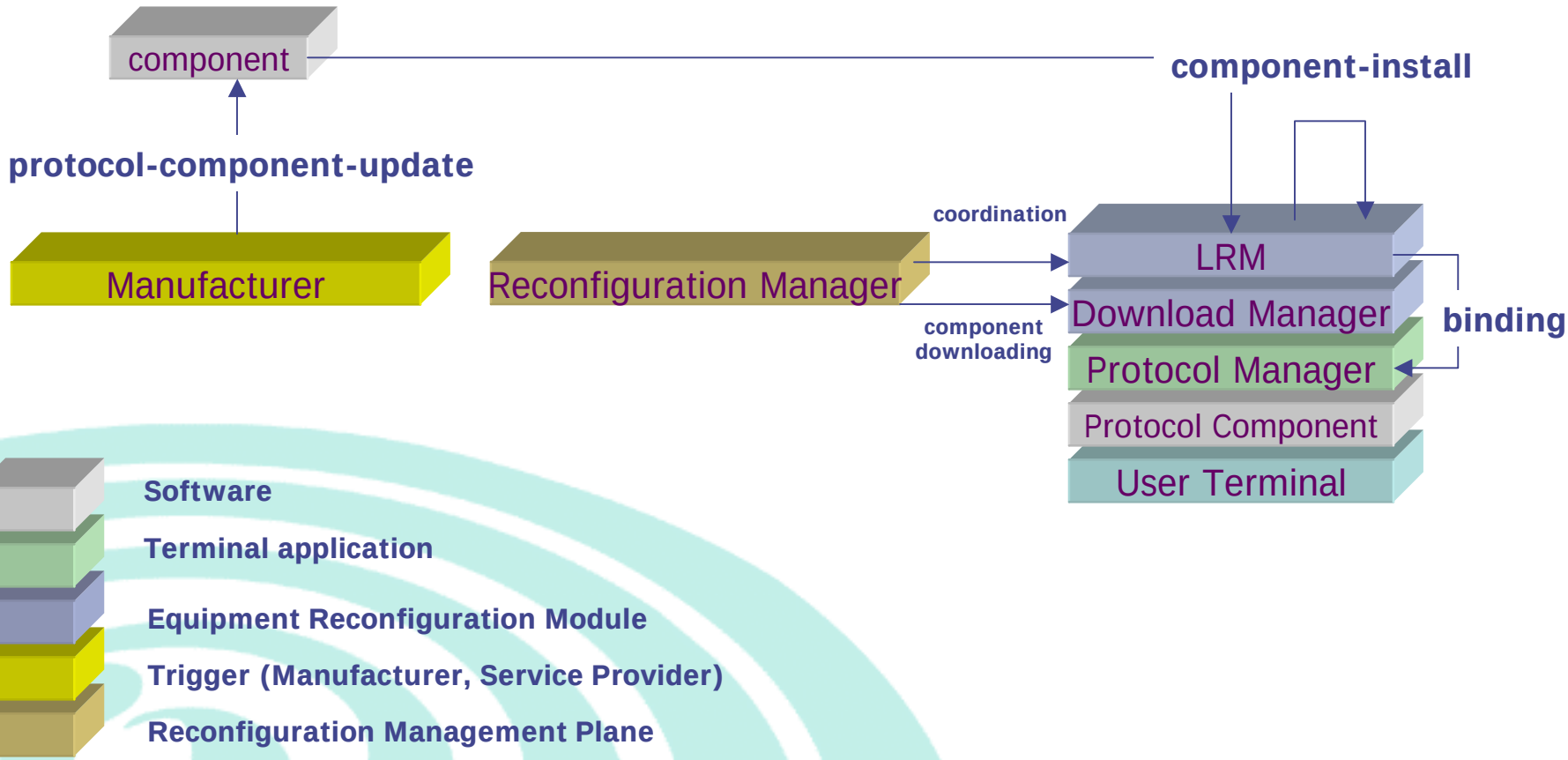
Patch-upgrade scenario (Logical View)



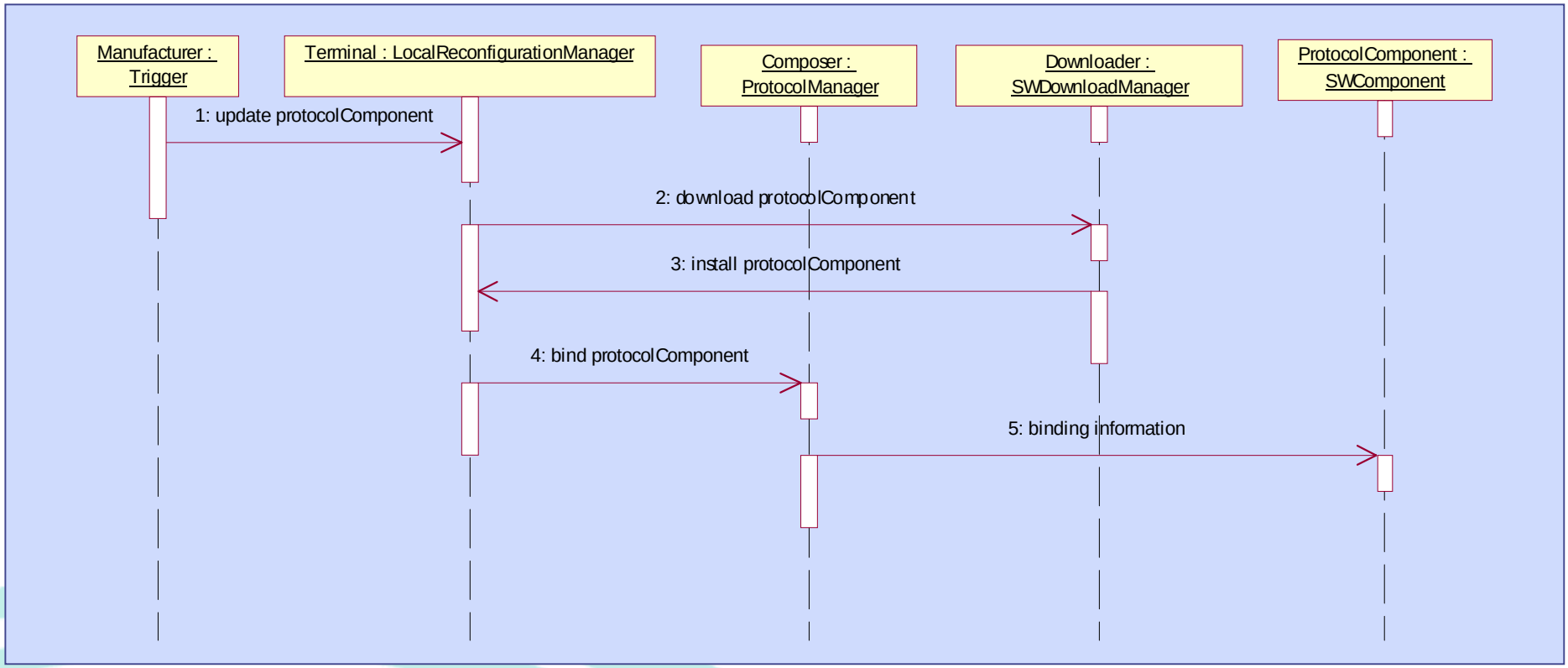
Patch-upgrade scenario (Sequence Diagram)



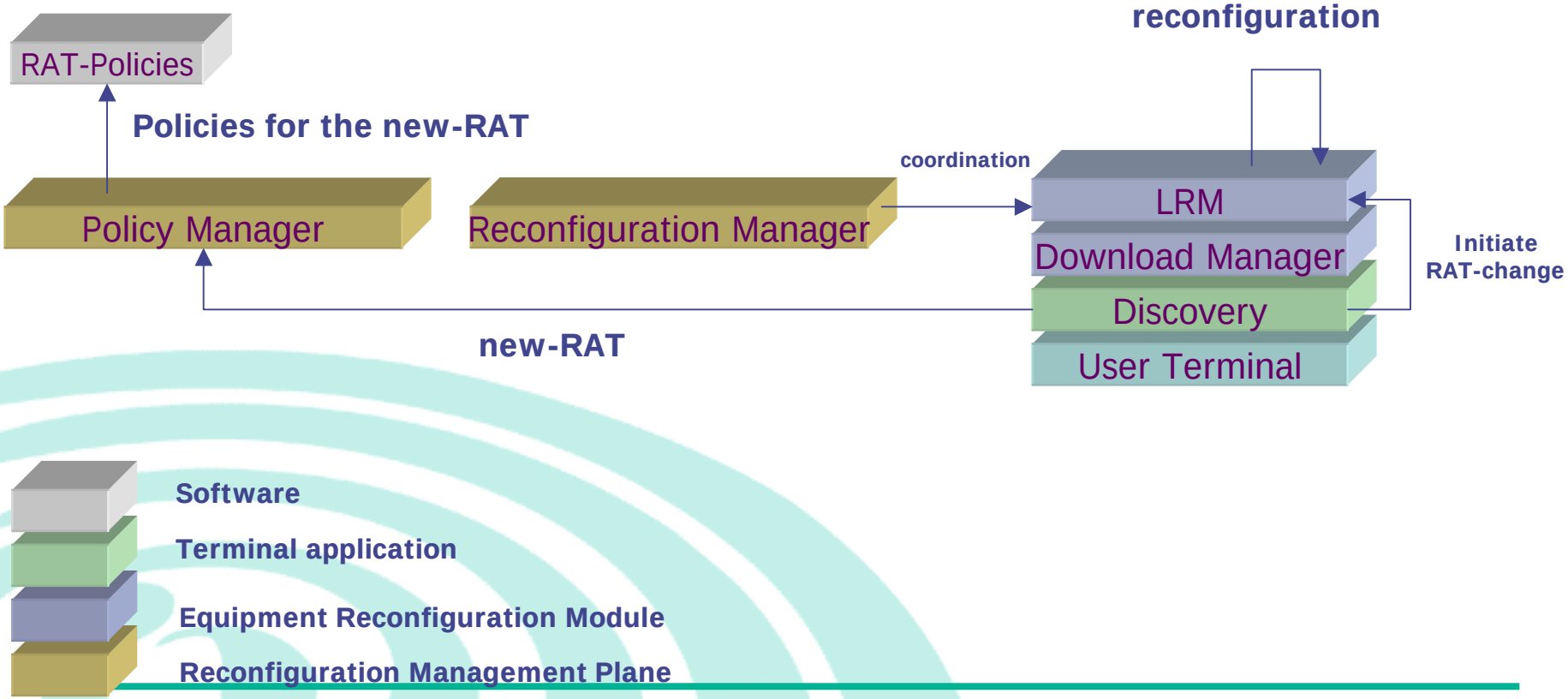
Protocol reconfiguration scenario (Logical View)



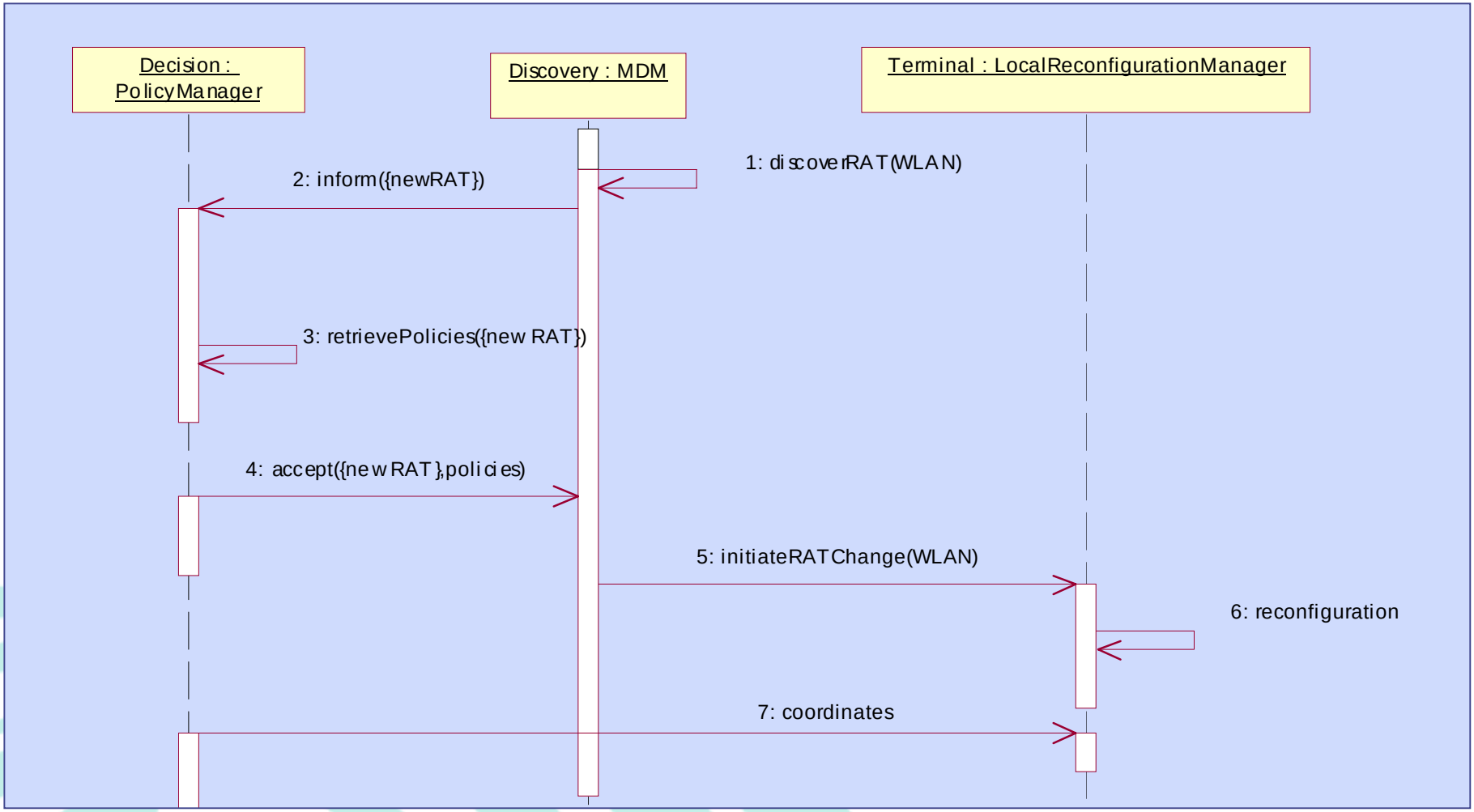
Protocol reconfiguration scenario (Sequence Diagram)



RAT-Discovery scenario (Logical View)



RAT-Discovery scenario (Sequence diagram)



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Thank you for your attention!

Questions?

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