

**Approach to Requirements Engineering
Based on
UML and High-level Petri Nets**

Iterative 4-step process with limited manual intervention for deriving a prototype of the UI (User Interface) from scenarios and for generating a formal specification of the system.

STEP 1: Use case diagram of the system as defined by the UML is elaborated, and for each use case occurring in the diagram, scenarios are acquired in the form of UML sequence diagrams and enriched with UI information.

STEP 2: The Use Case Diagram and all sequence diagrams are transformed into CP nets.

STEP 3: CP nets describing one particular use case are integrated into one simple CP net, and the CP nets obtained in this way are linked with the CP net derived from the use case diagram to form a global CP net capturing the behavior of the entire system.

STEP 4: A prototype of the UI of the system is generated from the global CP net and embedded in a UI builder environment for further refinement.