

Introduction

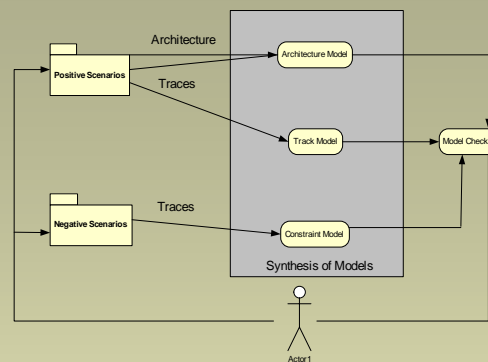
Examples of narrow passageways include one-way bridges, canals, and work zones. Common problems include:

- **Traffic congestion, accidents, and costly delays.**

The purpose of this study is to understand how the elements of this problem domain should be organized for synthesis and validation of system-level architectures.

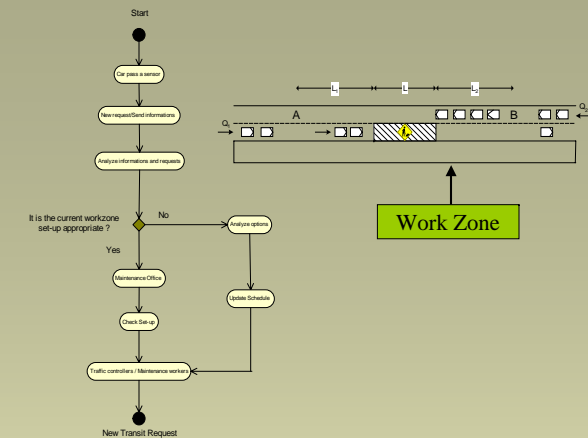
Positive and Negative Scenarios

We are exploring the use of positive and negative scenarios and model checking procedures for the elicitation of system behavior models



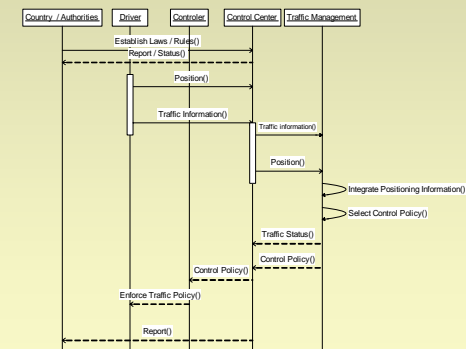
High-level representation is in terms of use-case diagrams for narrow passageways (e.g., work zone)

Activity Diagrams



Fragments of System Behavior

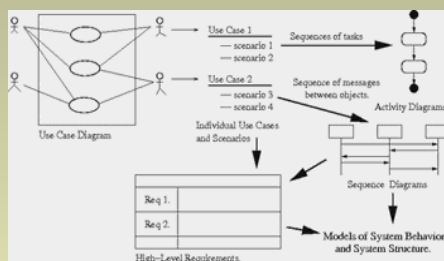
Sequence diagrams show the interaction of objects that occurs during system scenarios:



Conclusion

Our goal is to create high-level models applicable to multiple narrow passageways domains, and to organize concepts into class hierarchies suitable for reuse.

Operation Concept to Models



The development methodology is as follows:

