

Model-based Testing Application in Industry

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Creating Confidence.

Overview

- Introduction
- Issues with MBT in industry
- Syntax-based testing approach
- Conclusions



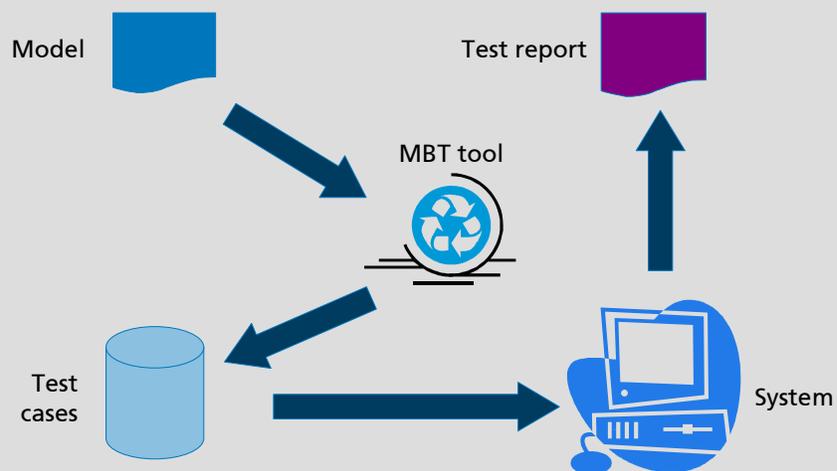
Introduction

- Test automation has been a topic for many years
- Automatic test execution is commonly applied
- Tests are still specified manually
- Model-based testing is a new hype
- What does it promise?

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Model-based testing in a Slide



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Issues with MBT in Industry

- Confusion about test automation and automatic test execution
 - So I bought a testing tool
- Models are hard to come by
- Model building is still laborious and error prone
- MBT tool support is still in its infancy

Syntax-based testing approach

- Return to the simple test approach of checking
 - Request
 - Response
- Many request, response pairs can be determined syntactically
- A pure syntax-based approach is efficient
- Can build upon tool support

Example: WebServices



Test Case Pattern

- Send request with arbitrary but valid values
- Analyze response:
 - Correct type and all expected values with valid values
 - Exception: further investigation
 - Unexpected response: test failed

Live demo!

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CAN-Bus Message

```
010010100101000100010101010  
010100010100101000100010001  
010100100010010001010001010  
010010010100101010001010001
```

Request /
Reponse
encoded

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Conclusions

- A syntax-based test generation approach
 - Is efficiently implemented
 - Can be fully automated
 - Is more often applicable than you might think
 - Can be used as smoke test
 - Can help to verify test start criteria
- A syntax-based approach is no substitute
 - For system testing
- A syntax-based approach can be extended
 - To replace emulators



Thank you,

Questions?

