User Interface Testing in Automotive

Car Media Systems Generations

Source: http://www.brucesallan.com

Car Media Systems Generations

Source: http://www.car-radio.info

Car Media Systems Generations

Source: http://www.allegro.pl

Car Media Systems Generations

Source: http://www.ramtrucks.com

Car Media Systems Generations

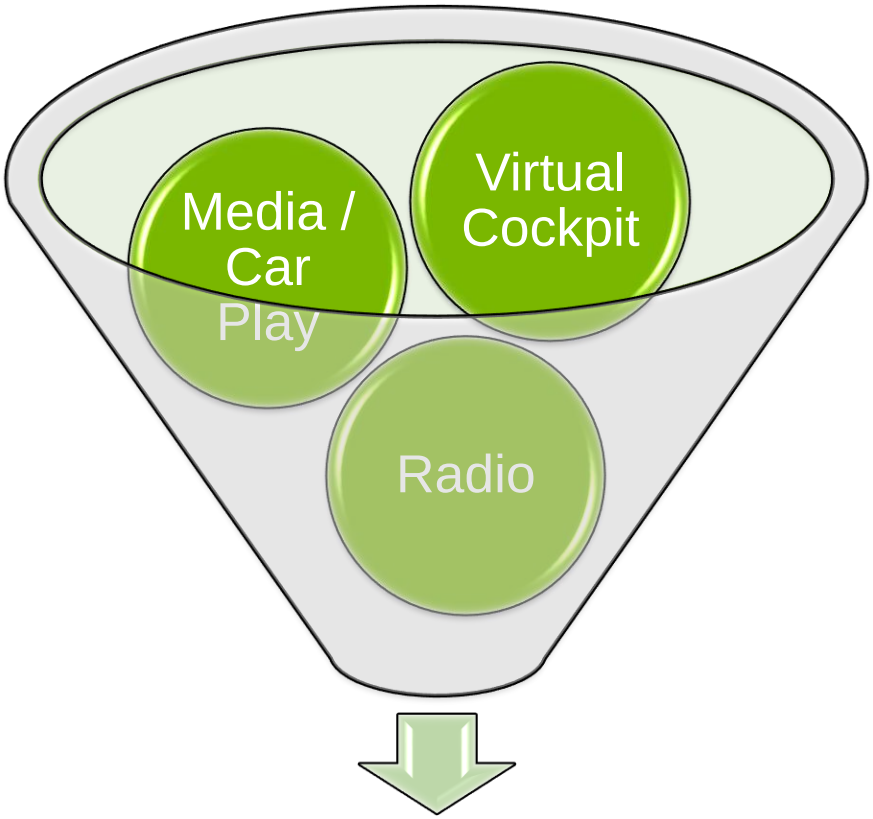
Source: https://www.cnet.com

Car Media Systems Generations

Source: http://www.businesswire.com

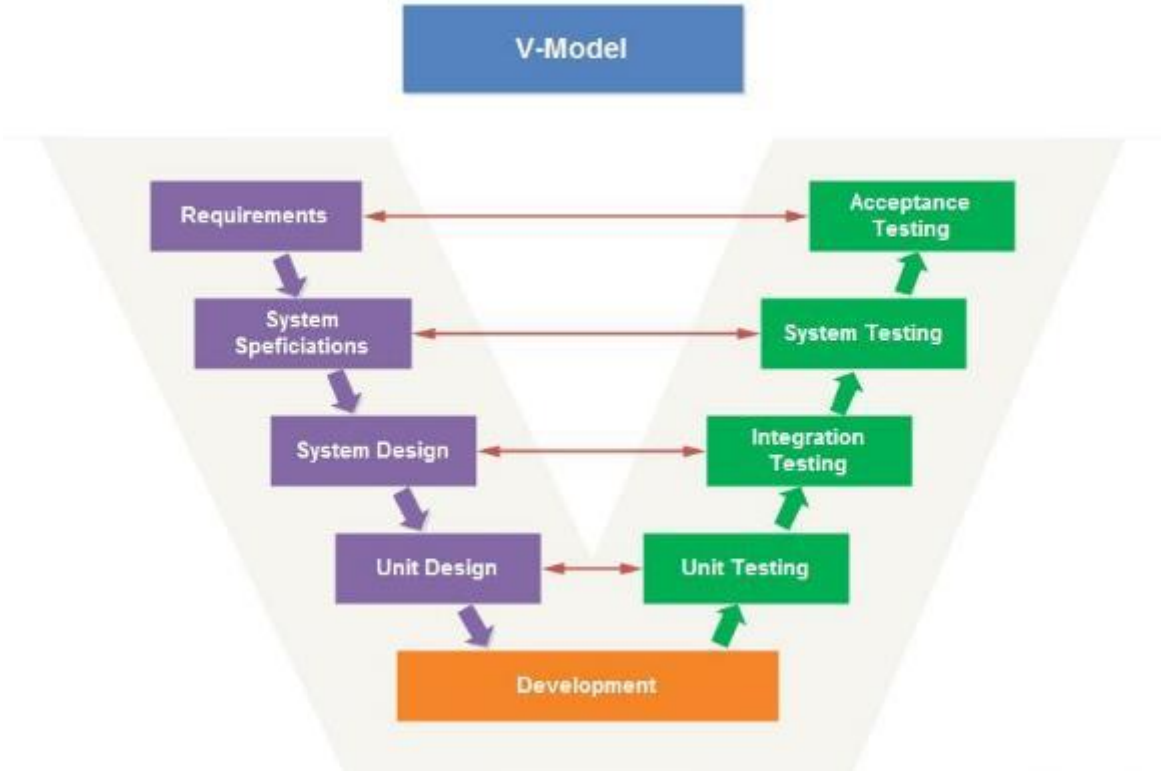
Car Media Generations UI Use Case Numbers

Car Media Systems Time to Market

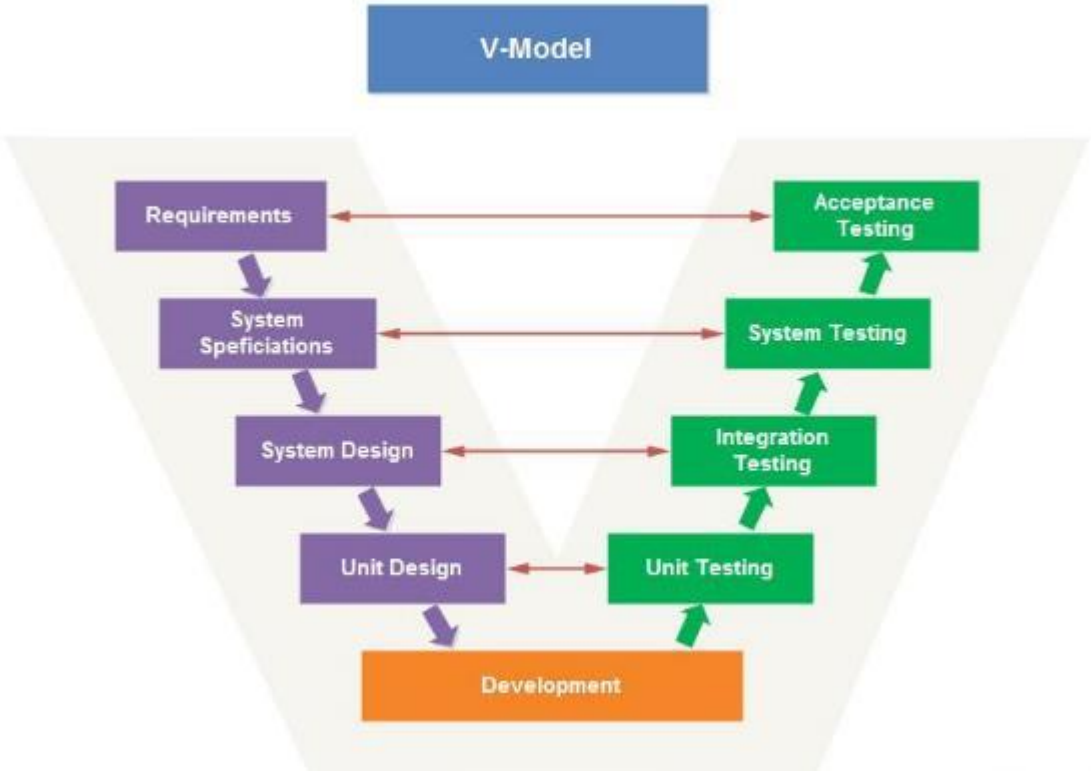


2-3 Years
(~1 year in case of liftings)

Quality, Quality, Quality



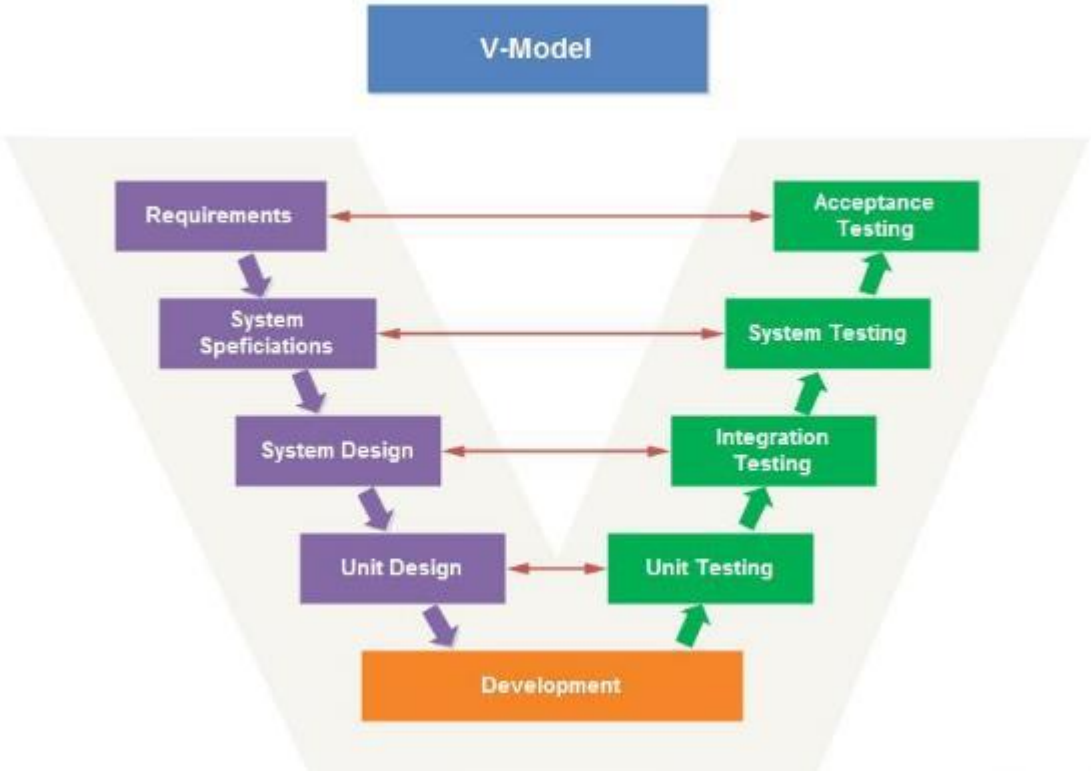
Quality, Quality, Quality



Module Tests

- Execution in isolated environment
- Stub other components
- Checks normal conditions, corner cases and wrong data provision

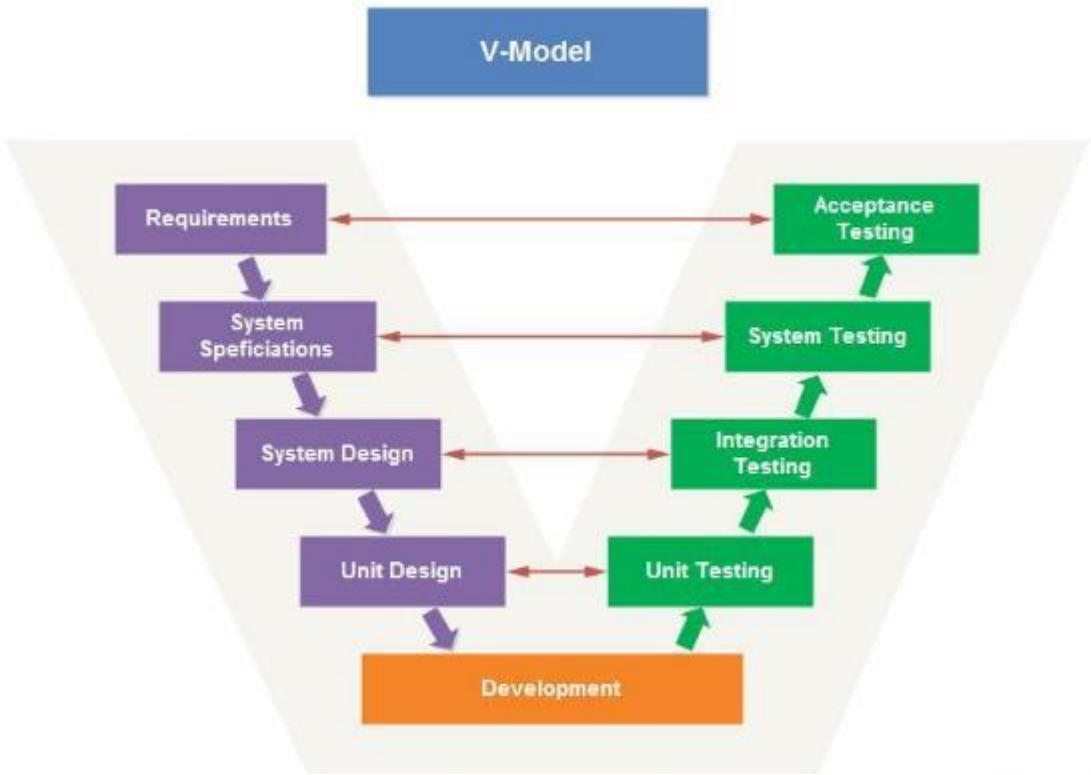
Quality, Quality, Quality



Integration Tests

- Tests interface coherency according to architecture
- Check interactions between components

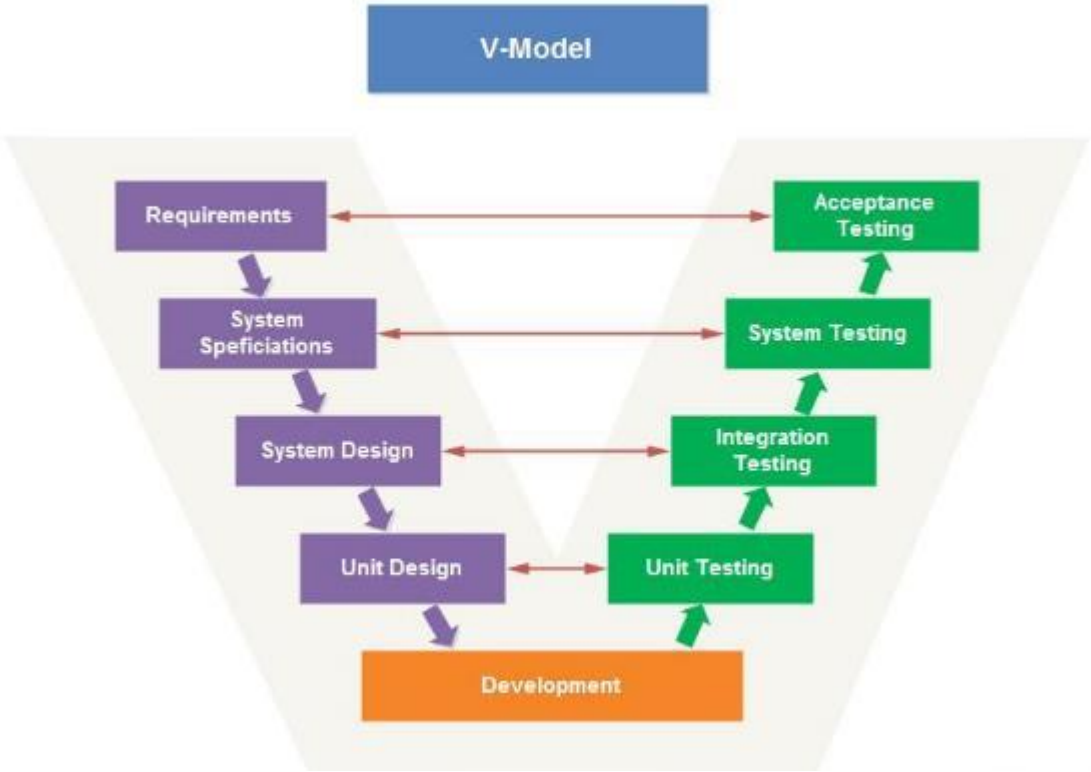
Quality, Quality, Quality



Verification Tests

- Check against system requirements
- Verify non-functional features (performance, quality)
- Test behaviour in stress conditions

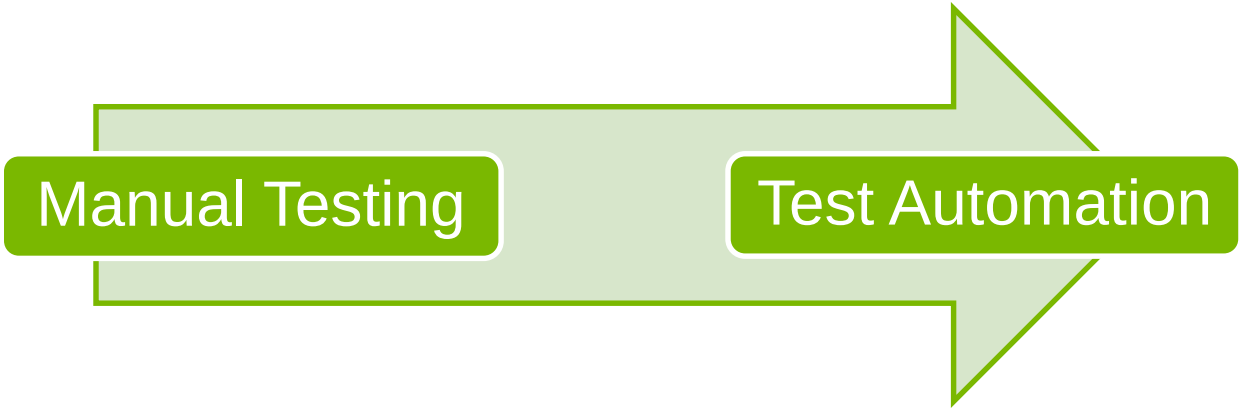
Quality, Quality, Quality



Acceptance Tests

- Verification of customer requirements
- Approvals

User Interface Testing Trends



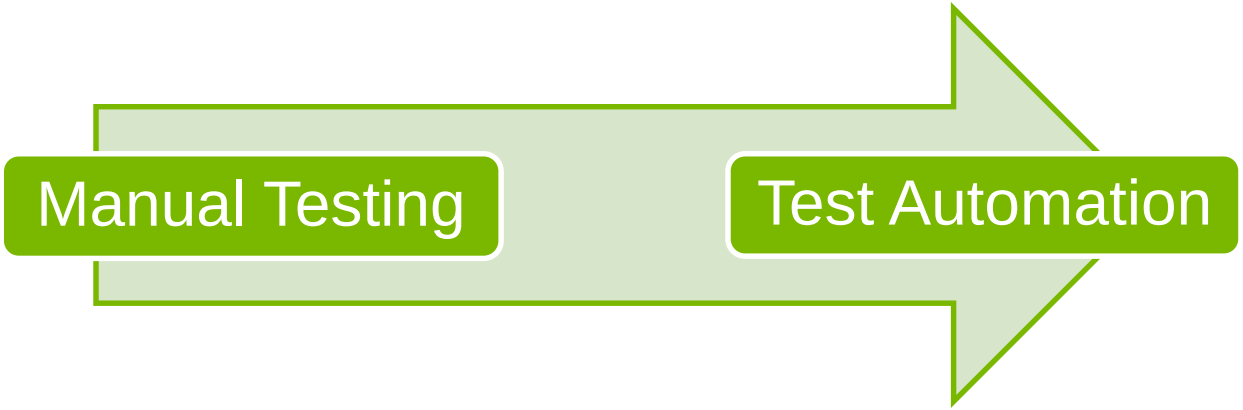
Module Tests

- Writing tests of functions in all variants

Module Tests

- UI Structure and Behavior Generators
- Static Code Checks
- Stub Generators / Test Frameworks (Google Mock / Google Tests)

User Interface Testing Trends



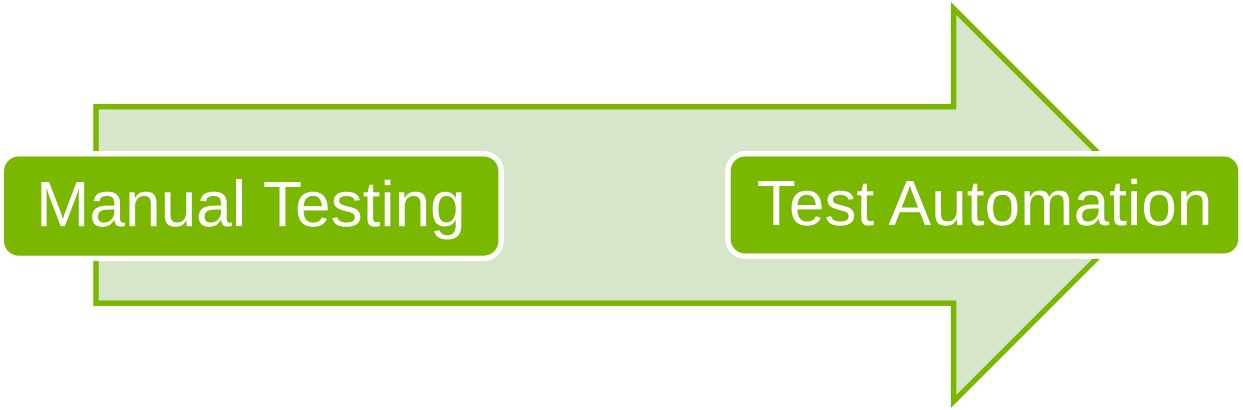
Integration Tests

- Compilation of all components
- Writing test cases based on architecture

Integration Tests

- Continuous integration proces
- Generation interface test cases based on architecture

User Interface Testing Trends



System Tests

- Manual Requirements Tests
- Free Tests (Stress, Load, Performance)

System Tests

- Automated HIL Testing (requirements, regression)
- Monkey Tests (Stress, Load, Performance)

Triggers and Outputs Convergence - HIL

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