

## INTRODUCTION

In V&V, one of the main challenges is to gain maximum confidence in covering all specified functionality.

A well-known mechanism is to start from the requirements when creating the test items specification. The test item spec should be again consistent (and traceable) with the test implementation.

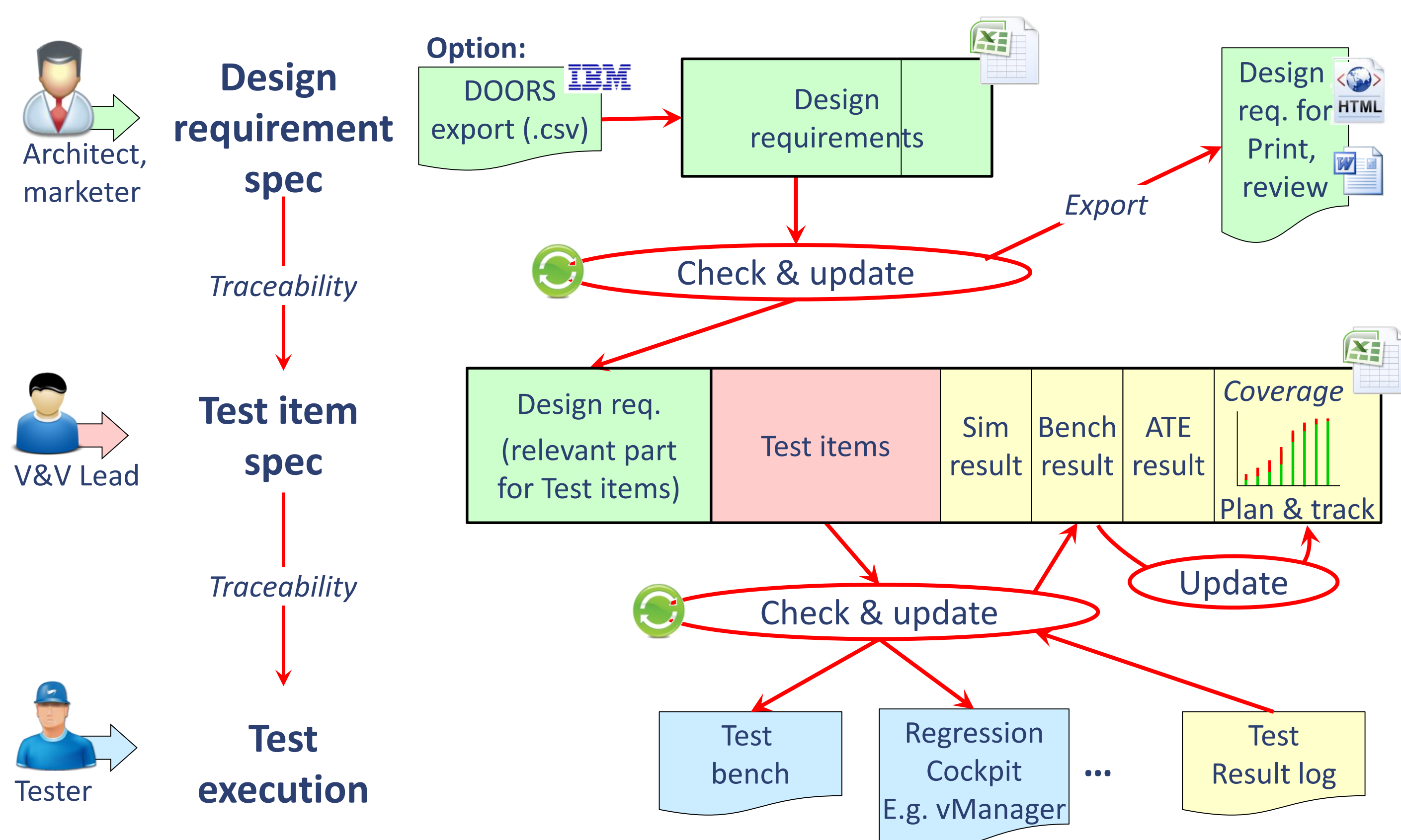
In practice however, inconsistencies arise, because different owners, at different times need to make adaptations.

- Inconsistencies are difficult to trace, as comparison between these large amount of data is not straight-forward.
- Causing disconnection between specification and actual testing.

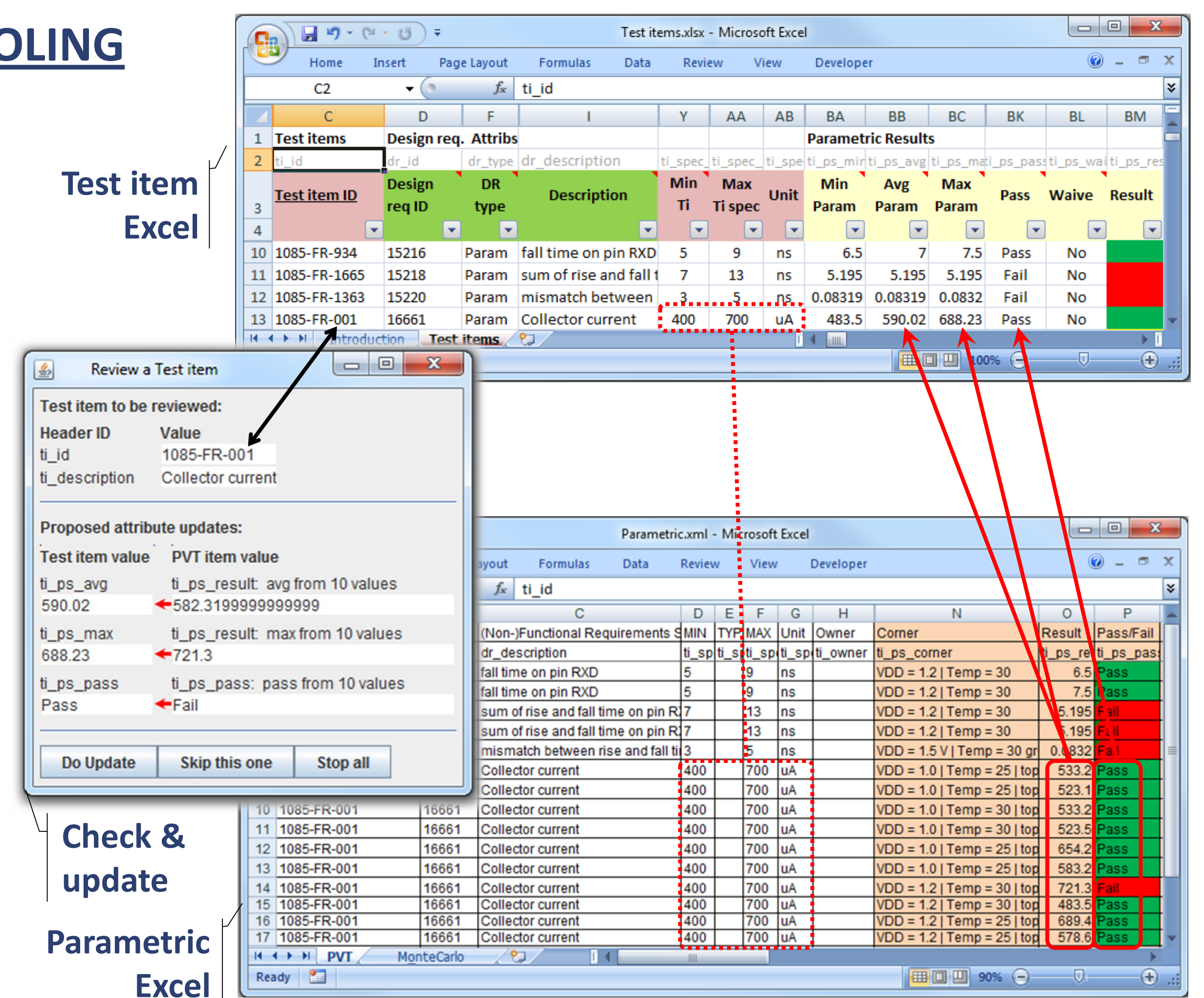
## OBJECTIVES

- Make **specification integral part of V&V flow**, by supporting **traceability** from spec to test results.
- Introduce **check & update** mechanism to synchronize (spec) data maintained by different owners:
  - Design requirements → Architect
  - Test items → V&V lead
  - Test benches and results → Test engineer
- Make **coverage explicit**:
  - All requirements are covered by test items
  - All specified Test items are passing

## V&V TRACEABILITY FLOW



## TOOLING



## KEY FEATURES

### V&V traceability flow

- Spec items in plain Excel: No complex macro's & cell linking
- Supports functional and parametric test environments
- HTML export for beamer friendly reviews
- Synchronize (check & update) shared attributes between specifications & test environments
- Test item spec contains summary of test results
- Coverage plot generated to keep track of test coverage

### Tooling

- Generic Check & update mechanism supports custom templates
- GUI enables explicit & controlled updates: Update one-by-one enables correction of the overall consistency
- Tool running on Windows & Linux, via GUI & command line

## CONCLUSIONS

- Check & update is implemented in a stand-alone tool, which safeguards the traceability and consistency throughout the V&V flow.
- Two NXP projects have successfully applied this flow, which included traceability between: design requirements, test items and parametric simulation.
- This ensured a more effective and efficient V&V process, better insight in the coverage, resulting in increased product quality!