

# **Traceability and Change Management**

**SEng 321**

# Stakeholders and an interesting relationship

- Many classes of stakeholders
- Different requirements
- Diverse market/political issues

RE = continuous negotiation process

# Software evolution and change management

Change in software development: as inevitable as difficult to control

- Reasons for change:
  - New requirements become apparent
  - Business and strategic goals change
  - Changes in customer market

Change management: largely a project management activity

- Possible responses to change:
  - Add new requirements
  - Modify existing requirements
  - Remove existing requirements

# Change management techniques

- Requirements prioritization, triage
  - → release planning
- Requirements traceability
- Formal change management process

# Requirements traceability

## Backward traceability

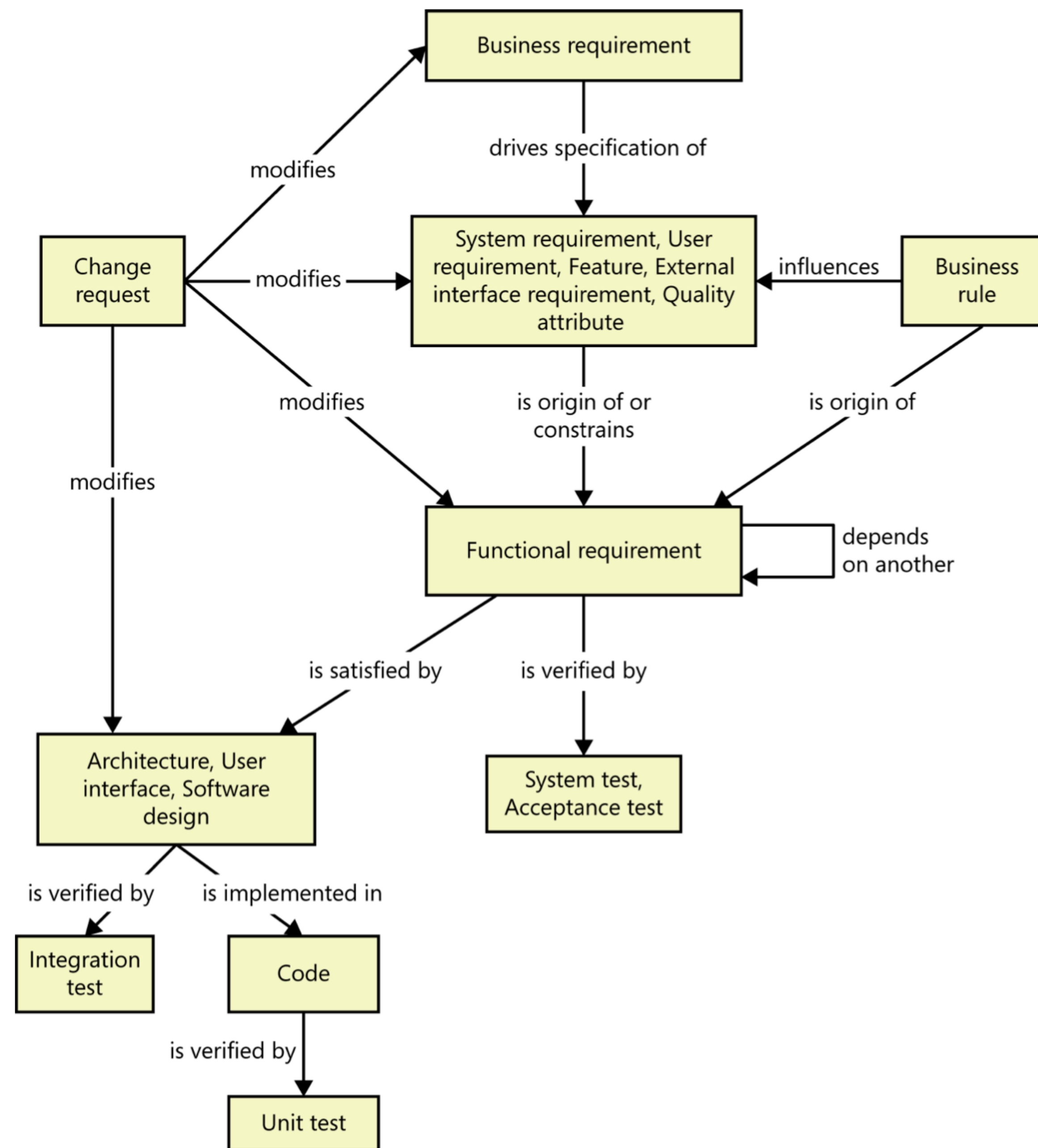
- To previous stages in development
- Most important: traceability to requirement rationale (pre-RS traceability)

## Forward traceability

- To all documents/artifacts that follow SRS (post-RS traceability)

## Important for:

- Assessing change requests
- Project management: progress visibility, risk management



**FIGURE 29-2** Some possible requirements trace links.

**TABLE 29-1** One kind of requirements traceability matrix

User requirement	Functional requirement	Design element	Code element	Test
UC-28	catalog.query.sort	Class catalog	CatalogSort()	search.7 search.8
UC-29	catalog.query.import	Class catalog	CatalogImport() CatalogValidate()	search.12 search.13 search.14

# Requirements traceability

- Easier in theory than in practice
- Costs may not even out for those who get the benefits
- Weak current tool support in:
  - Tracing between different tools
  - Capturing informal communication



# Formal change management

- Configuration management
  - Versioning of the SRS,
  - Baselining the SRS after the requirements analysis was complete
- The latest SRS should include the current understanding and agreement wrt requirements
- Change control board (CCB) in charge of reviewing and approving change requests
- Changes between versions should be documented