

Presentation

Bio

P R E S E N T A T I O N

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Friday, May 5, 2000  
9:00AM

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## **SOAP OPERA TESTING**

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**Hans Buwalda**  
CMG TestFrame Research Center

# Soap Opera Testing

## Agenda

- introduction
- underlying architecture: the TestFrame Model
- Soap Opera's
- usage

## The Challenges for a Test Process

- testing should be fun
- testing should be effective
- testing should be efficient
- testing should be under control

## The “mechanical approach” for test development (example)

- start with (preferably long) list of requirements
- make a test case for every requirement
- use a standardized test technique to translate the requirements into the test cases
- hire (many) people to perform the tests by hand
- ... .

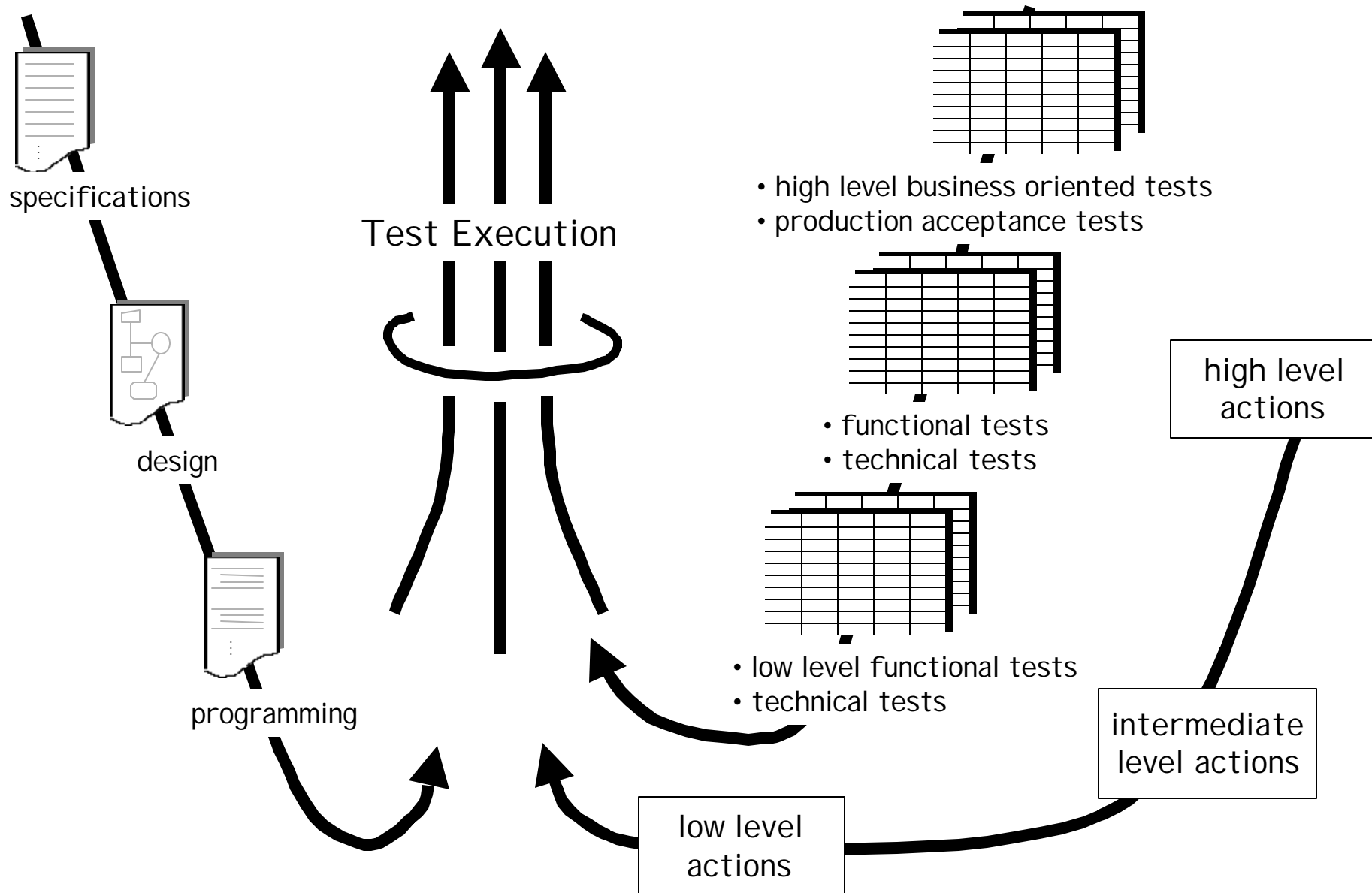
## Some pitfalls with a too mechanical approach

- no fun at all
- shutting down creativity
- coverage is only at single requirement level
- any defects should probably have been found in an earlier test
- suggests false sense of control
- testset hard to maintain
- doesn't catch mistakes in the requirements
- . . . .

## Questions to answer with a test collection

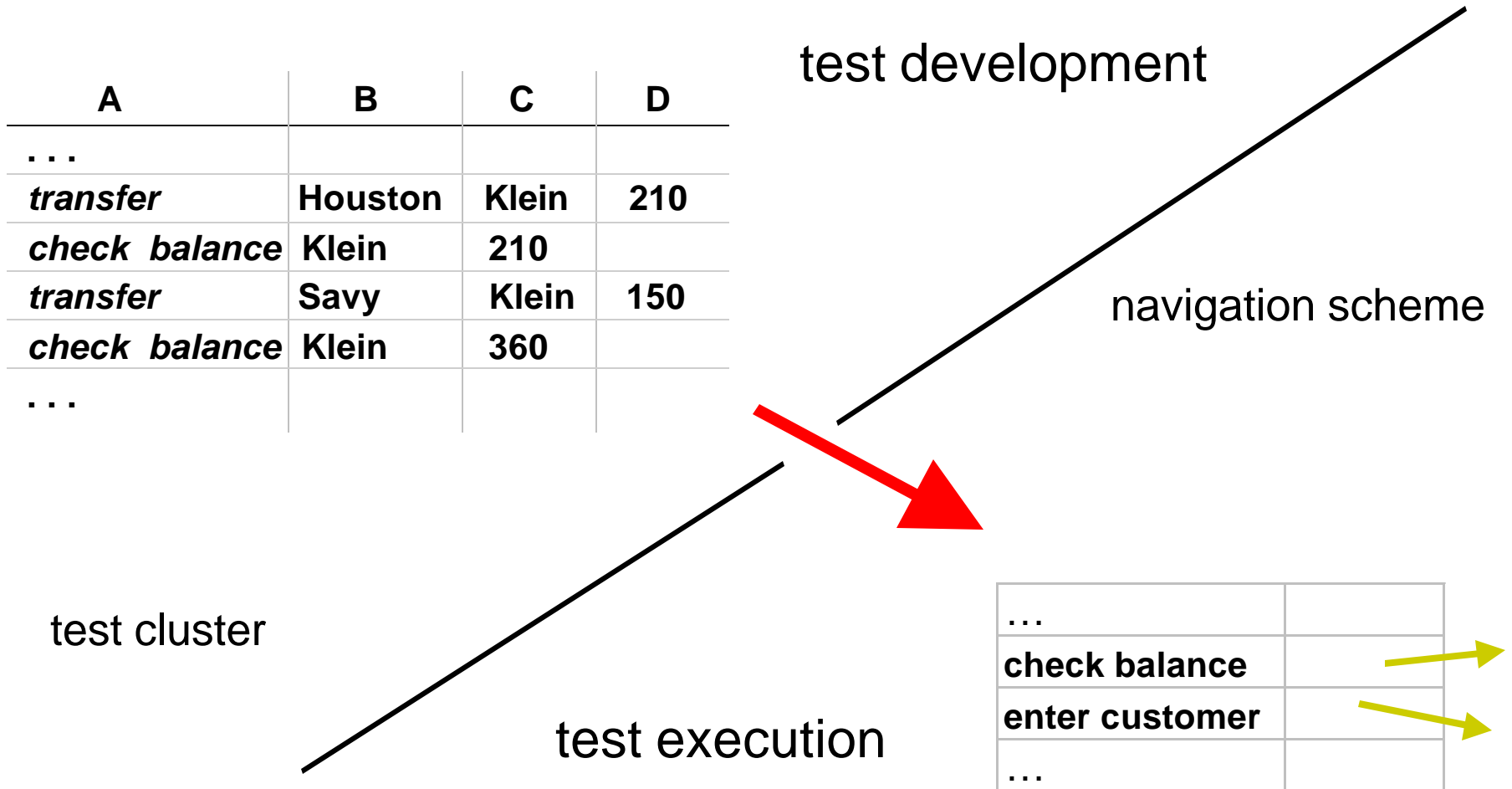
1. does the system comply to the requirements
2. are there any problems (defects and/or failures) we should know about
3. will the system work in practice

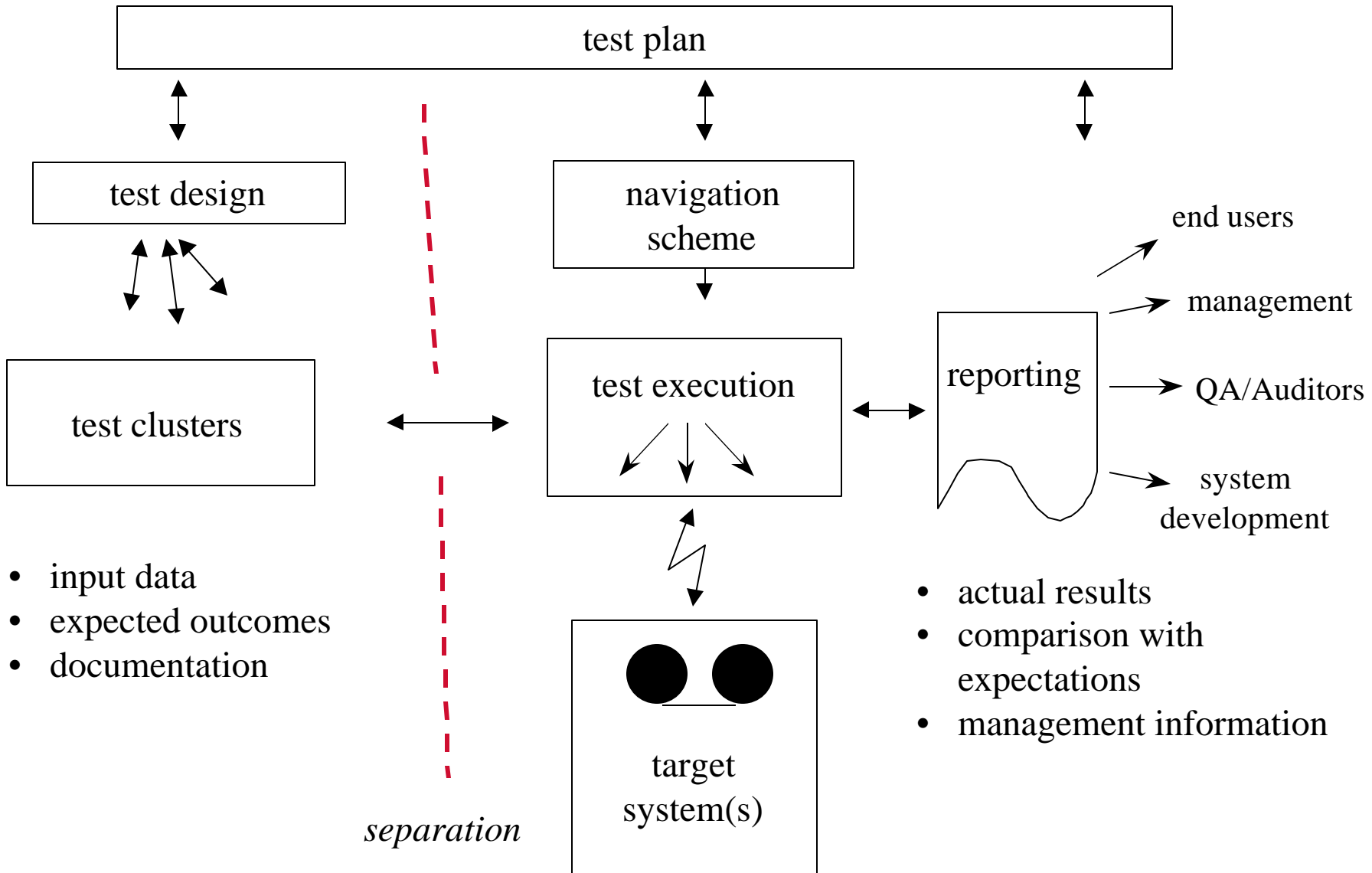
# The TestFrame products





# Development and navigation in TestFrame





## Soap Operas

Ashley hears about Jack's deposit when he thought he had to go. Victoria lectures her father about what's wrong with him and Nikki but Victor advises her that it's none of her business. Olivia learns Dru has no regrets about leaving and takes great satisfaction in having Lily as her companion. Dru then asks Olivia why she is raking Malcolm over the coals. Stopping by Gina's, Nikki spots Brad and sits with him, admitting she doesn't want to be alone tonight. Victor stops by Mack's party at the Crimson Lights. Ashley takes a home pregnancy test. Worried about Billy, Raul makes call and J.T. claims he doesn't know where Billy is. Raul rushes over and finds Billy out cold in the snow. Raul worries when he can't find a pulse. . . .

## Properties of Soap Operas

- about "real life"
- but condensed
- and more extreme

## Soap Operas for testing

- define a scope of the test to develop
- identify with the business environment
- which elements would make things difficult
- draft scenario's (typical some dozen lines)
- write them down in clusters

## Examples of story lines when used for testing

### Pension Fund

William starts as a metal worker for Industrial Entropy Incorporated in 1955. During his career he becomes ill, works part time, marries, divorces, marries again, gets 3 children, one of which dies, then his wife dies and he marries again and gets 2 more children....

### World Wide Transaction System for an international Bank

A fish trade company in Japan makes a payment to a vendor on Iceland. It should have been a payment in Icelandic Kronur, but it was done in Yen instead. The error is discovered after 9 days and the payment is revised and corrected, however, the interest calculation (value dating)...

# Example of test lines

	from	to	amount	valuta	trans nr
enter payment	123421344	4124244123	120000	yen	&keep tx1
check value dating	&tx1	\$0.47			
wait days	9				
order to reverse	&tx1				
	from	to	amount	valuta	trans nr
enter payment	123421344	4124244123	1200000000	IKr	&keep tx2
check value dating	&tx2	\$7,701.56			
....					

Soap Operas (in testing) are not necessarily:

- "extreme"
- far fetched
- long and elaborate
- pieces of art and creativity



## “Killer Soaps”

- more specifically aimed at finding hidden problems
- run when everything else has passed
- one option: put a killer soap at the end of a normal cluster
- ask the “specialists” for input

## Reasons for scenarios like soaps

- test collection can be made more compact
- it is more fun to make
- specialists used more effectively
- testing more of the application
- less directly dependent on functional specs, so catching more pitfalls

What to use it for

primary use

- high level functional acceptance testing

but also:

- module testing
- system testing
- integration testing
- ...

What is not interesting for soaps

- screen stuff
- routine tests
- any other straight forward compliance testing

## A List of "Paradigms"

- Domain driven
- Stress driven
- Specification driven
- Risk driven
- Random / statistical
- Function
- Regression
- Scenario
- User testing
- Exploratory
- Security

## Relation to use cases

- friendly cousins
- soap opera's are more directly aimed at testing, for example by exaggerating and using (non local) combinations
- less analytical "top down", but "outside in": translated from end user practice

## Who could make Soaps

- nearly everybody:
  - end users
  - specialized testers
  - developers
  - auditors
  - ...

## Ways to get them

- coaching end users or business specialists
- interviews
- own fantasy
- workbooks
- using joint development sessions



## Joint Testware Development (JTD) <sup>TM</sup>

- JTD = A technique for structured test development without (complete) documentation
- JTD <> Just talk to the end-users and write down what they say
- JTD <> A substitute for developing documentation (requirements, designs, user-guides)

What can joint sessions give you

- Test Strategy
- Acceptance Criteria
- Cluster Grouping
- Test conditions
- Evaluation of Results
- Starting up development of scenarios

## Joint sessions

- moderator / chairman
- users
- business specialists
- developers
- testers



## Setup of a joint session for a telecom provider

- 1st session
  - Introduction by moderator and project manager
  - explanation about the JTD procedure
  - explanation of the functional area by a specialized user
- 2nd session
  - start of production of test conditions
- 3rd session
  - start of production of test scenarios
- 4th session
  - evaluation test scenarios

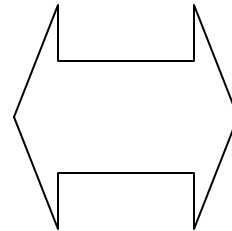
## Structured test development and Soaps

- soaps are not the natural way to get “coverage”
- additional techniques can help, examples in TestFrame:
  - test conditions
  - test design templates
- recommendation: do “matching” afterwards

# Test analysis and test creation

Test Analysis:

- what do we want
- what do we need



Test Creation:

- confrontation with reality
- put it to the test

separate

and

relate

specifications

analytical techniques

business

environment



# Example Test Condition

nr	description
...	
3.51	it is checked that the exit date is after the entry date
...	

<i>test condition</i>	3.51	name	entry date	exit date
<i>enter employment</i>		Bill Goodfellow	1999-10-02	1999-10-01
<i>check error message</i>		The exit date must be after the entry date.		

# Matching Conditions

condition	description	severity	tested in scenario:	
MBT-C01	a customer entered in the enter client screen is present in the database	high	<a href="#">MB01</a>	Entering customers using manual numbering
			<a href="#">MB02</a>	Automatic account numbering
MBT-C02	a customer with a positive balance can transfer money to another customer	high	<a href="#">MB01</a>	Entering customers using manual numbering
			<a href="#">MB02</a>	Automatic account numbering
MBT-C03	a customer with a negative balance cannot transfer money to another customer			
MBT-C04	the balance of the paying customer is decreased with the sum payed	high	<a href="#">MB01</a>	Entering customers using manual numbering
			<a href="#">MB02</a>	Automatic account numbering
MBT-C05	the balance of the receiving customer is increased with the sum payed	high	<a href="#">MB01</a>	Entering customers using manual numbering
			<a href="#">MB02</a>	Automatic account numbering
MBT-C06	account numbers can be entered manually by the user	medium	<a href="#">MB01</a>	Entering customers using manual numbering
MBT-C07	account numbers can be generated automatically by the system	medium	<a href="#">MB02</a>	Automatic account numbering
MBT-C08	...			
...				



## Test Design Templates

- spreadsheet based technique for designing tests
- introduced in 1998 as an extension to TestFrame by Edward Kit
- friendly technique and yet very strong, for example in identifying needed situations and combinations
- for a further description please have a look at Ed's article in Software Development Magazine:

<http://www.sdmagazine.com/breakrm/features/s992f2.shtml>

# Example of Test Design Templates

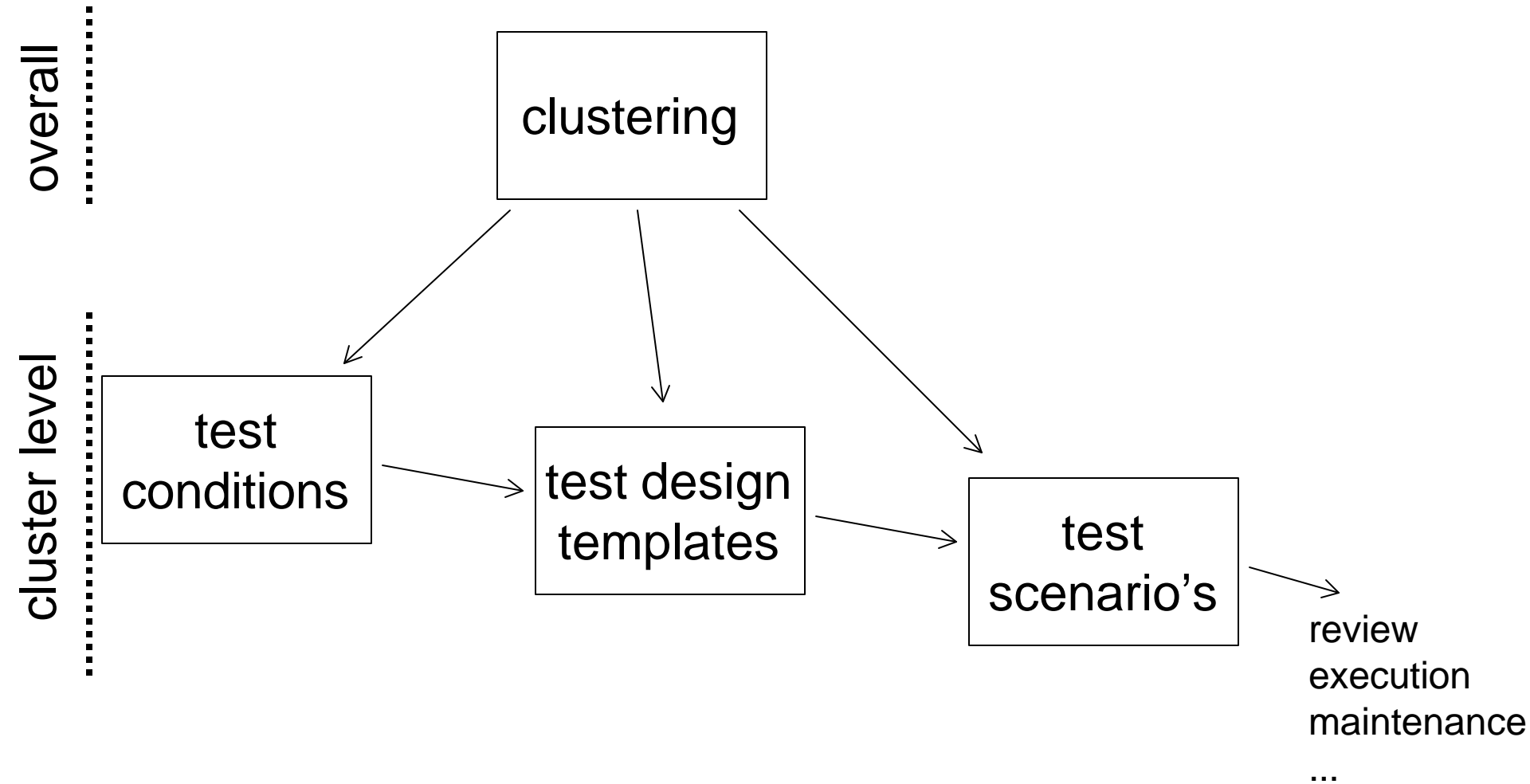
(applied to SDT's ReviewPro package for supporting inspections and reviews)

<b>Feature Hierarchy:</b>	Default Entry Type Standard				
<b>Matrix Summary:</b>	Check that the default (non-customized) Entry Types can be selected/used				
<b>Test Design:</b>	<b>Technique</b>	Equivalence Class <input type="button" value="v"/>		<b>Feature Combination</b>	No <input type="button" value="v"/>
<b>Risk Analysis:</b>	<b>Impact</b>	High <input type="button" value="v"/>		<b>Likelihood</b>	Low <input type="button" value="v"/>
<b>Test Case ID:</b>	DETS01	DETS02	DETS03	DETS04	
<b>Test Case Validity:</b>	Valid <input type="button" value="v"/>	Valid <input type="button" value="v"/>	Valid <input type="button" value="v"/>	Valid <input type="button" value="v"/>	<input type="button" value="v"/>
<b>Priority:</b>	High <input type="button" value="v"/>	High <input type="button" value="v"/>	High <input type="button" value="v"/>	High <input type="button" value="v"/>	<input type="button" value="v"/>
<b>Test Condition</b>					
Log Entry Input Fields	*	*	*	*	
Document Reviewed =					
Location =					
Type =	defect	question	external issue	praise	
Severity =					
Status =					
Disposition Code =					
Summary =					
Attachments =					
Select Default Entry	*				
Select Entry #2		*			
Select Entry #3			*		
Select Entry #4				*	
<b>Expected Results</b>	Output= Go to Reviewer's Log View, Log is in the Reviewer's Log Forum, Correct Entry Type is selected in the Log Entry	Output= Go to Reviewer's Log View, Log is in the Reviewer's Log Forum, Correct Entry Type is selected in the Log Entry	Output= Go to Reviewer's Log View, Log is in the Reviewer's Log Forum, Correct Entry Type is selected in the Log Entry	Output= Go to Reviewer's Log View, Log is in the Reviewer's Log Forum, Correct Entry Type is selected in the Log Entry	

# Usage of Test Design Templates as portal to Soap Operas

Template ID:	MB des 1	MB des 2	MB des 3	MB des 4
		....		
customer	*	*	*	*
last name				
first name				
balance	positive	too low	positive	positive
number				
confirmation letter	yes	yes		
automatic numbering				yes
		....		
matching →				
tested in scenario:	MB01		MB01, MB02	MB02

# A life cycle for test development



## Questions to answer with a test collection

1. does the system comply to the requirements
2. are there any problems (defects and/or failures) we should know about
3. will the system work in practice

## Questions to answer with a test collection

		mechanical	soaps	soaps + techniques
1	does the system comply to the requirements	***	*	**
2	are there any problems (defects and/or failures) we should know about	*	***	***
3	will the system work in practice	**	**	***

## The three “holy grails” of Test Development



effective clustering of the tests



choosing the right technique per cluster



the proper level of the action

## Experiences

- the approach can work well once people are used to it
- it can be hard to get away from traditional functional testing
- not magic, use it where applicable (grail 2)
- good clustering is essential (grail 1)
- start with a coach



## Acknowledgements

- Edward Kit
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# Hans Buwalda

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Hans Buwalda is project director at CMG, a leading European information technology services group. He has over 15 years of experience in IT. Working for numerous organizations in sectors like finance, government, manufacturing, trade, and telecommunications, he has focussed on issues of IT management and strategy.

Today he is responsible for new developments around the TestFrame approach for testing and test automation, of which he is the main architect. He started the approach in 1994. In 1996 he presented the main ideas behind it for the first time to an international audience in a speech called "Testing with Action Words, Abandoning Record and Playback". Since then the approach is being used in an increasing number of countries and Hans has become a frequent speaker at industry conferences, tutorials, and workshops.