ALLES IM GRÜNEN! SPECIFICATION BY EXAMPLE MIT GREENPEPPER 4

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ANDREAS FALK UND DIETER BAIER,
STUTTGARTER TEST TAGE 2015

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Alles im Grünen! Specification By Example mit Greenpepper 4

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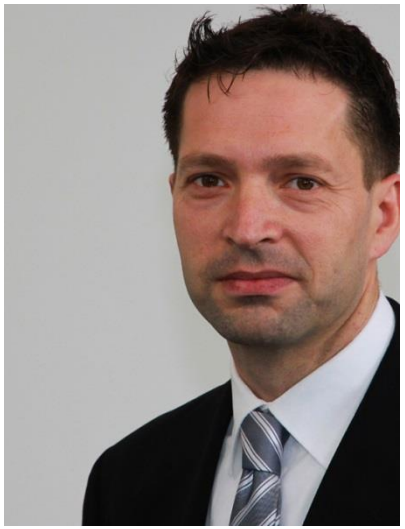

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AGENDA

1. Introduction: Specification By Example

2. GreenPepper

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SPECIFICATION BY EXAMPLE

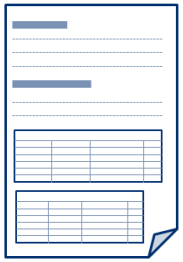
Specification By Example – Key Patterns

1. Derive Scope from Business Goals

2. Specifying collaboratively

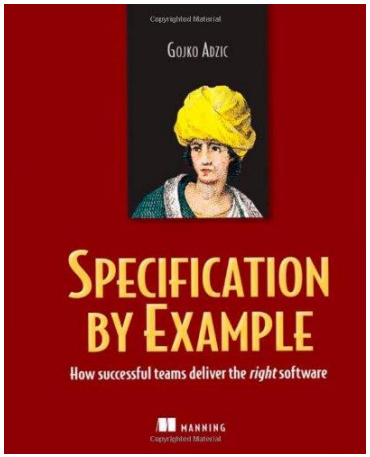
3. Illustrating using examples

4. Refining the specification



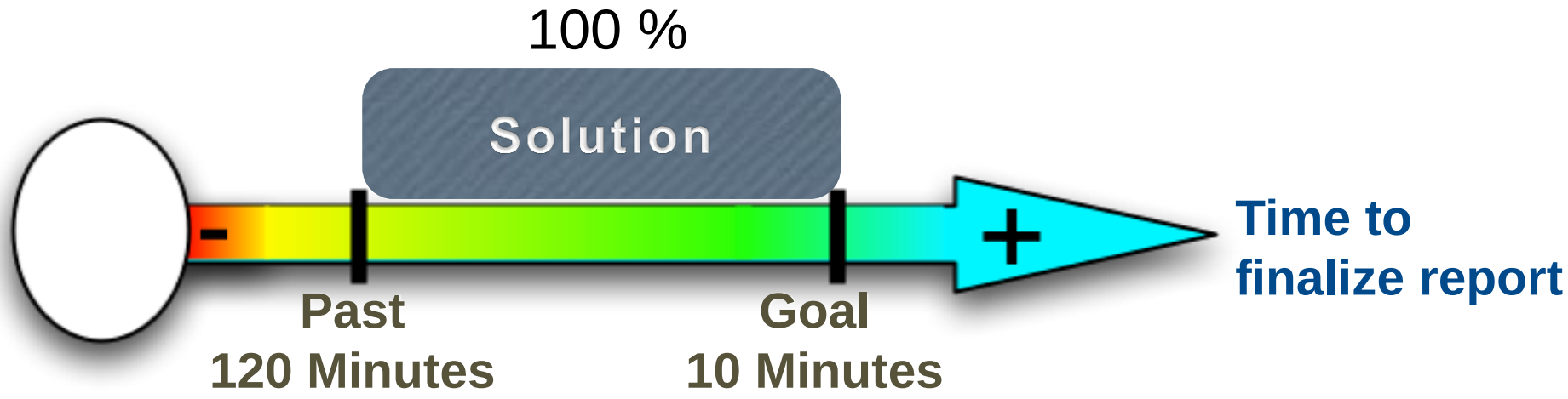
5. Automate validation & Validate frequently

6. Evolve a living documentation system

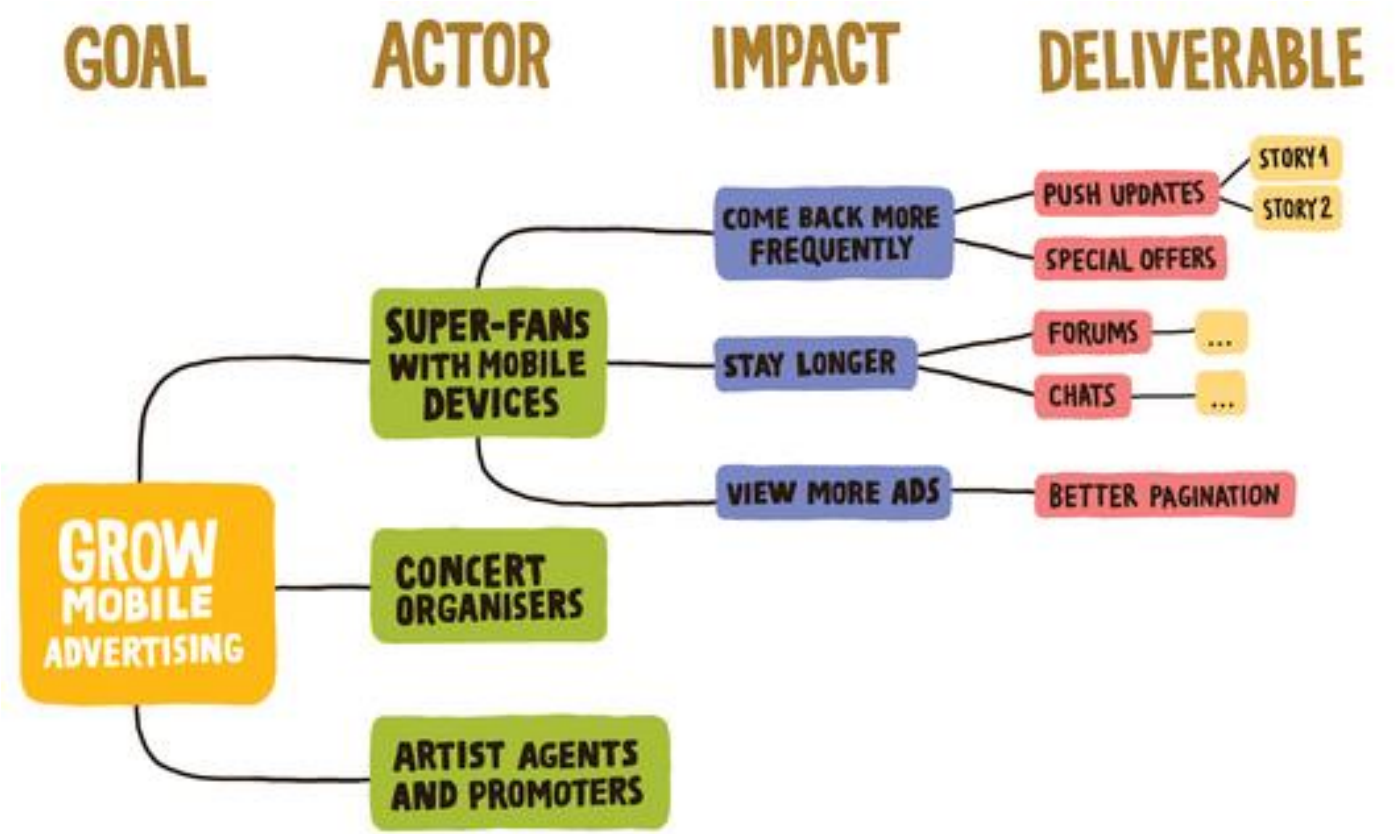


Value Requirements Engineering (Tom Gilb)

Functions → Values → Solutions



Impact Mapping



Why? (Goal)

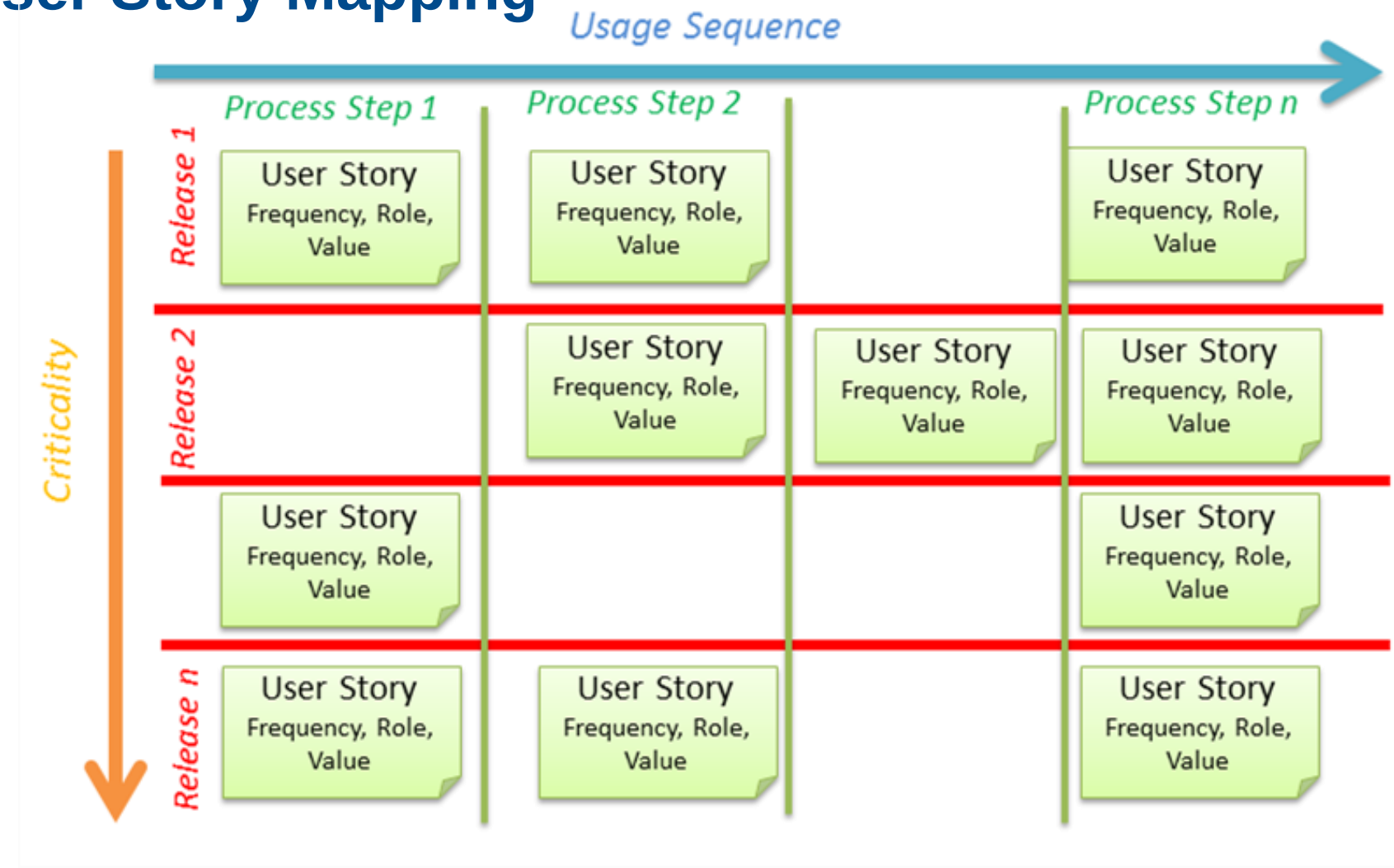
Who? (Actor)

How? (Impact)

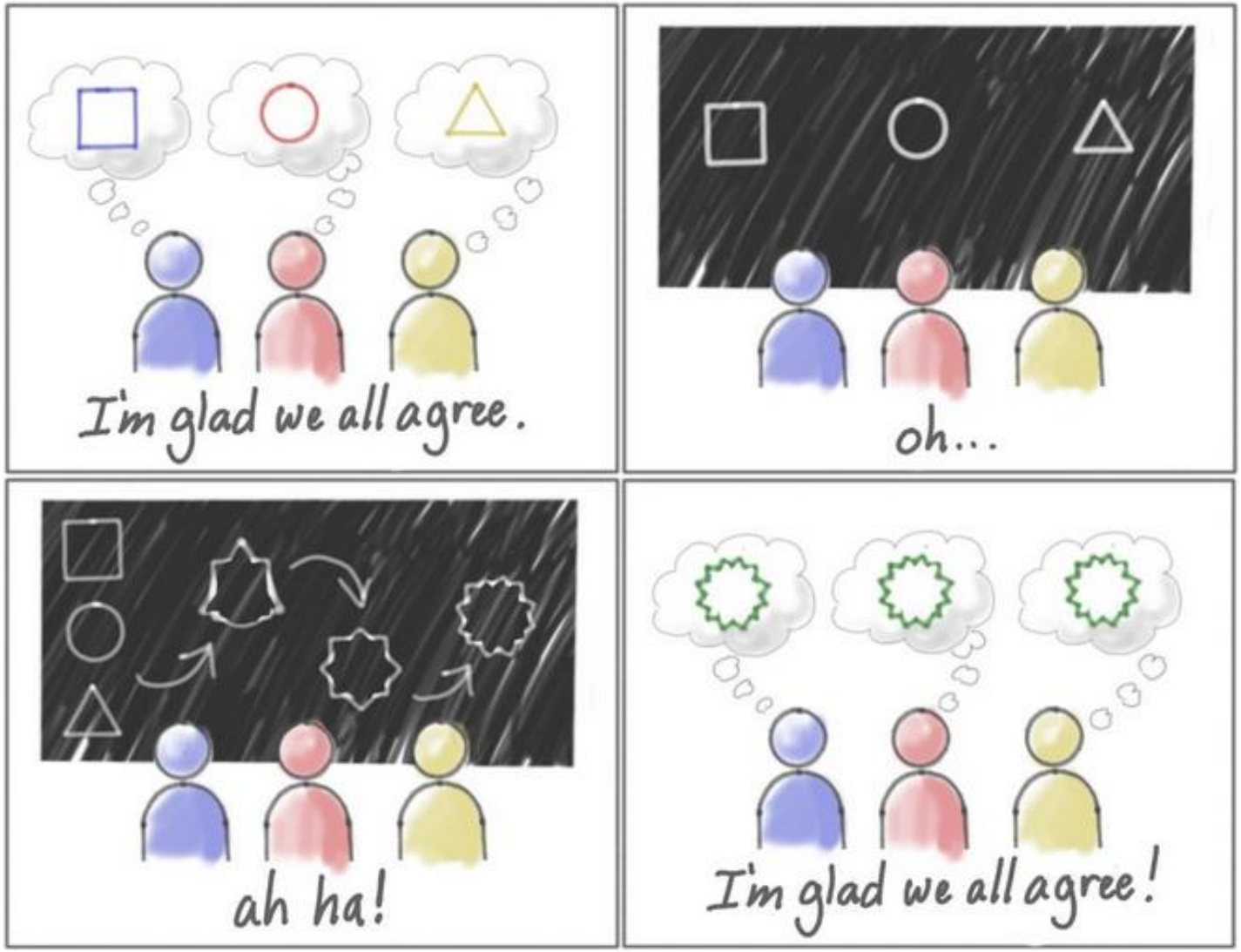
What? (Deliverable)

(Quelle: 50 Quick Ideas to improve your User Stories)

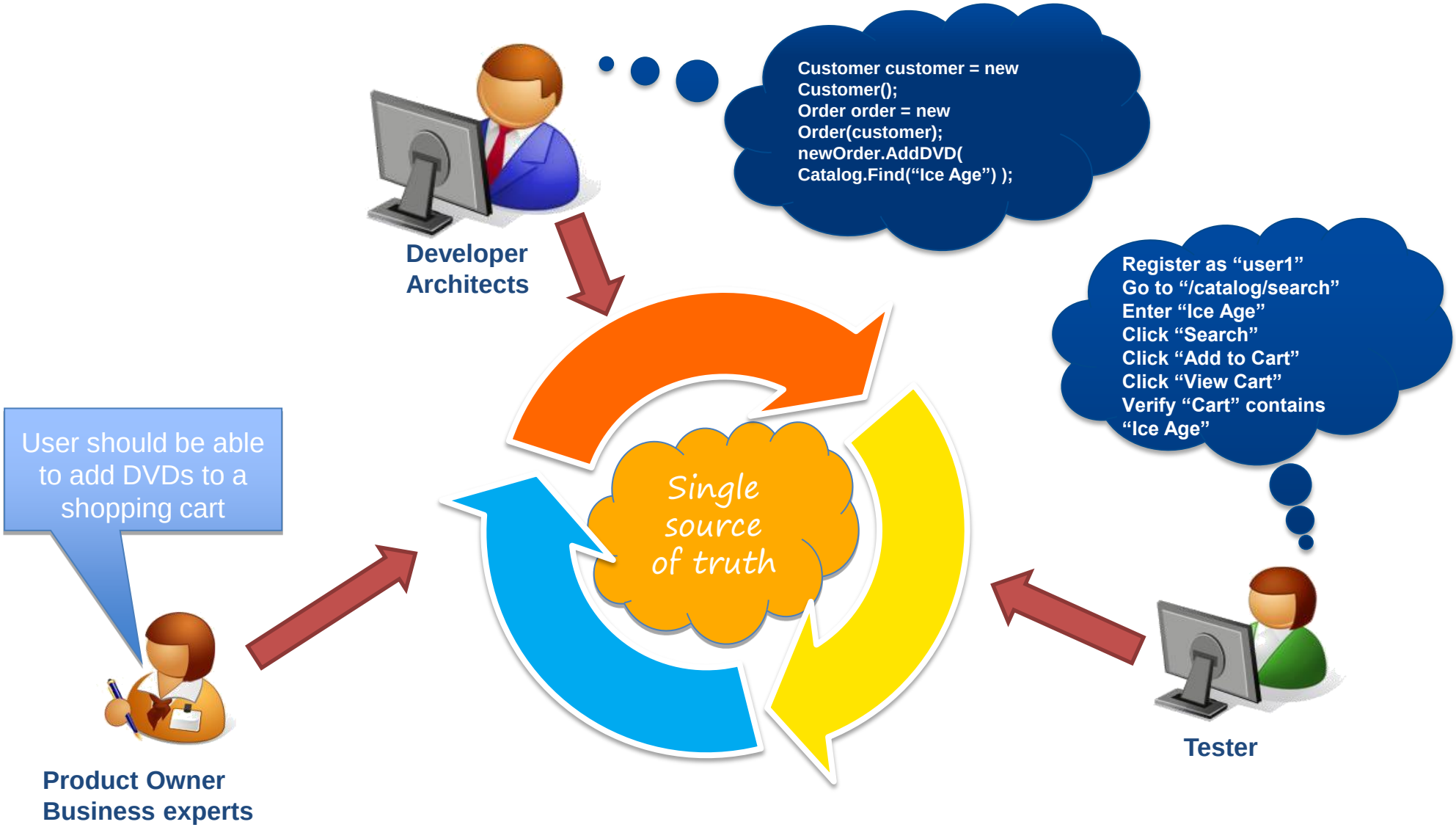
User Story Mapping



Shared understanding?



2 - Specifying collaboratively



Also known as…

- „Three Amigos“ (Gojko Adzic)
- „Power of Three“ (Janet Gregory & Lisa Crispin)

Goals

- Develop a shared understanding of the requirements
- Identify *business bugs*

How

- Start with all-team workshop („Big“)
- Continue with smaller workshops („Three Amigos“)

Examples should be…

- …precise
- …concrete, not abstract
- …complete (key examples)
- …realistic
- …given/validated by customers

Example: Simple time tracking system

Key examples:

- Total work time of 6 hours/day is valid
- Total work time of 5 hours/day is not valid
- Total work time of 10 hours/day is valid
- Total work time of 11 hours/day is not valid
- Work time from 09:00 until 15:00 is valid (Core working time)
- Work time from 10:00 until 16:00 is not valid

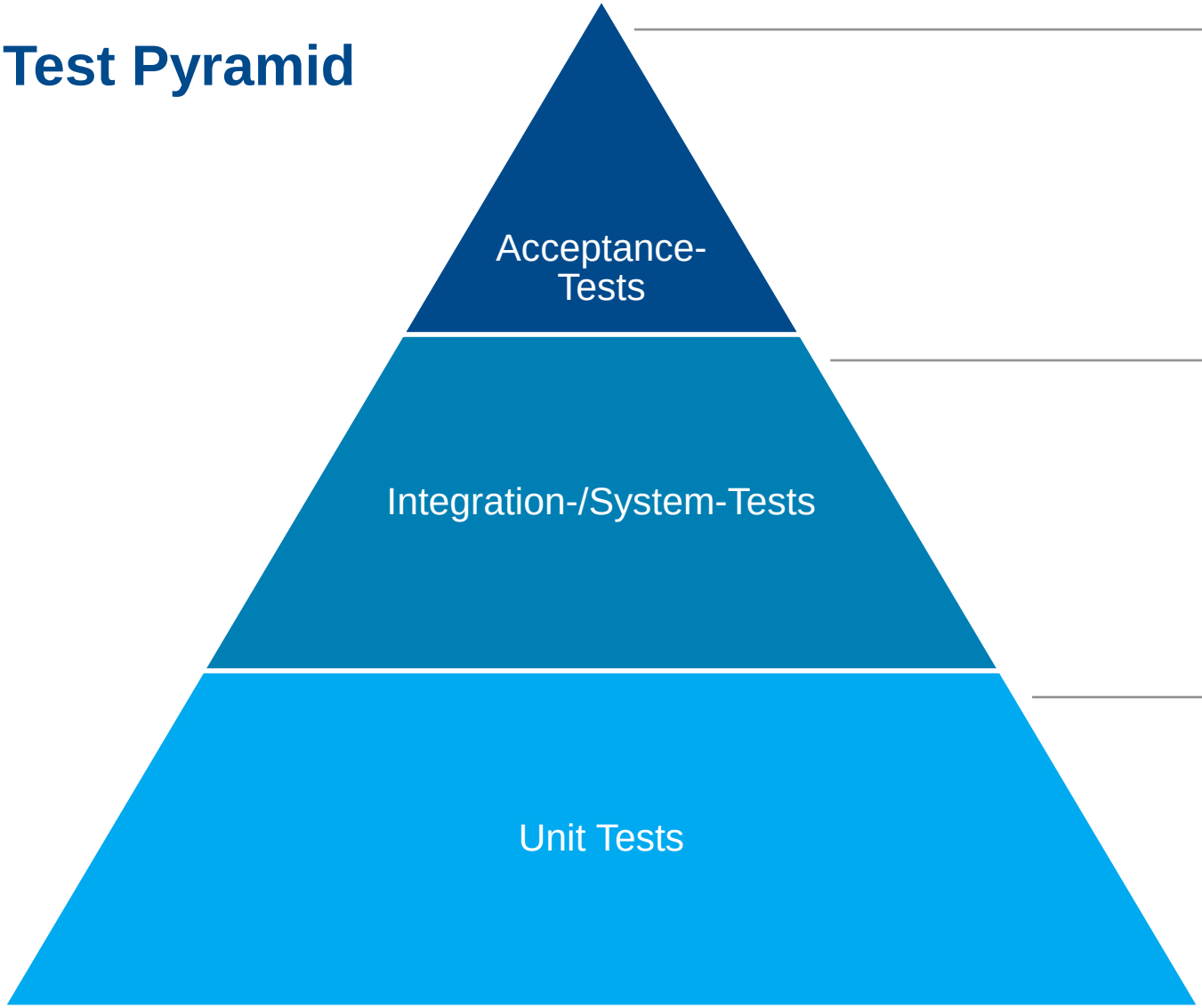
Example: Simple time tracking system

Start Time	End Time	Lunch Break[1]	Holiday	Total	Valid
08:00	17:00	1:00	--	08:00	Yes
09:00	20:00	1:00	--	10:00	Yes
09:00	20:01	1:00	--	10:01	No
09:00	15:00	--	--	06:00	Yes
08:00	14:00	--	--	06:00	No
09:00	15:00	1:00	--	05:00	No
09:00	15:00	1:00	4:00	09:00	Yes
10:00	18:00	--	--	08:00	No
--	--	--	8:00	08:00	Yes

1) What about required minimum lunch time?

5 - Automate validation & Validate frequently

Test Pyramid



Business Facing

Complex

API

Intermediate complexity

Technical Facing

Simple

5 - Automate validation & Validate frequently

Available Tools

Different formats

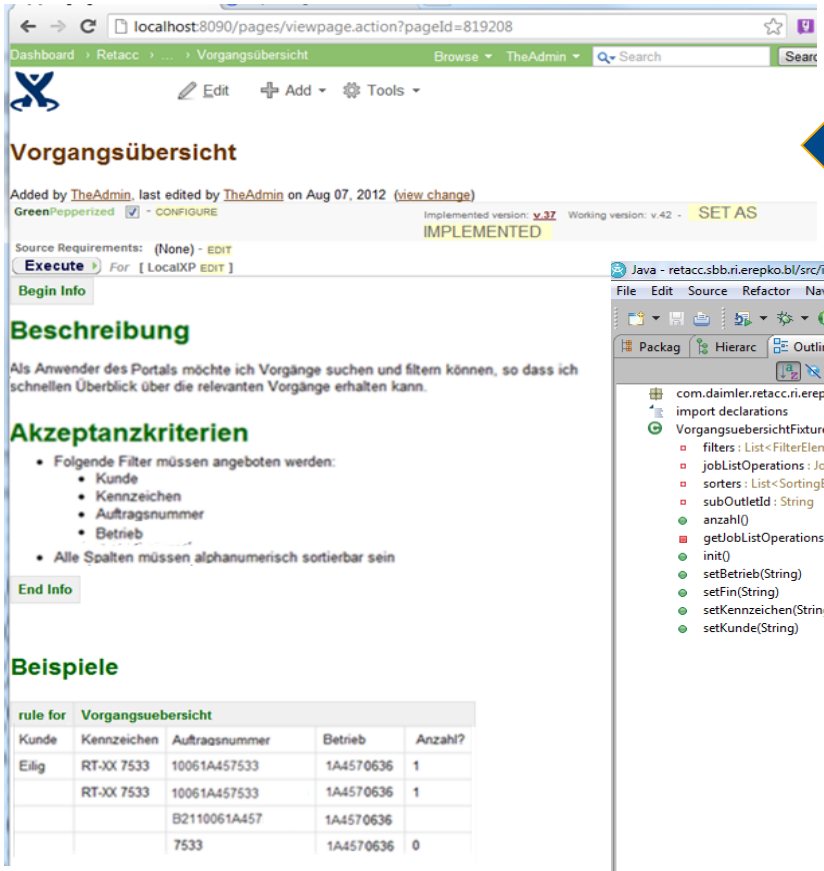
- Table based
- Text based
- Wiki based
- Script based

Tools

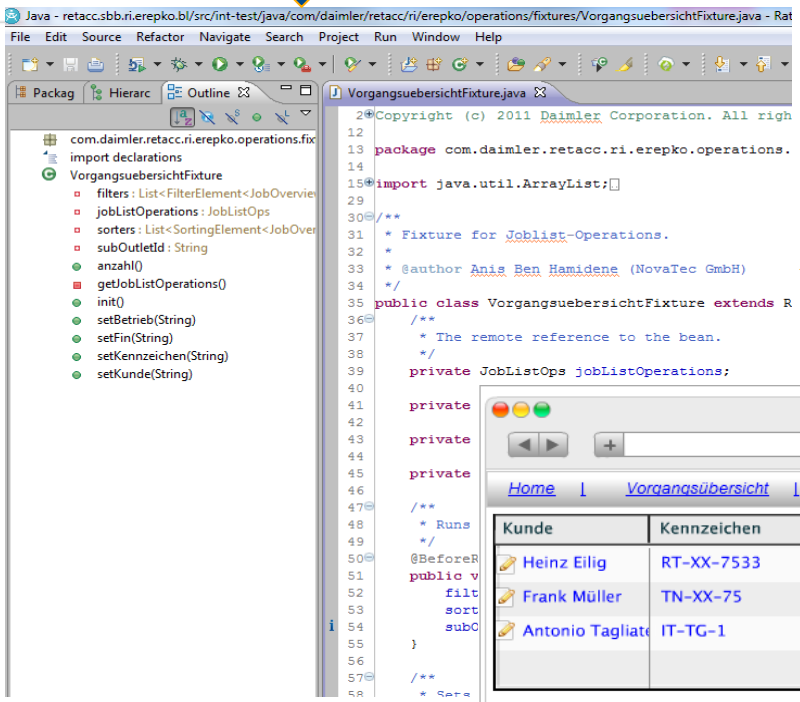
- Greenpeper
- FitNesse
- JBehave
- Robot Framework
- Cucumber
- Concordion
- Twist

Concordion

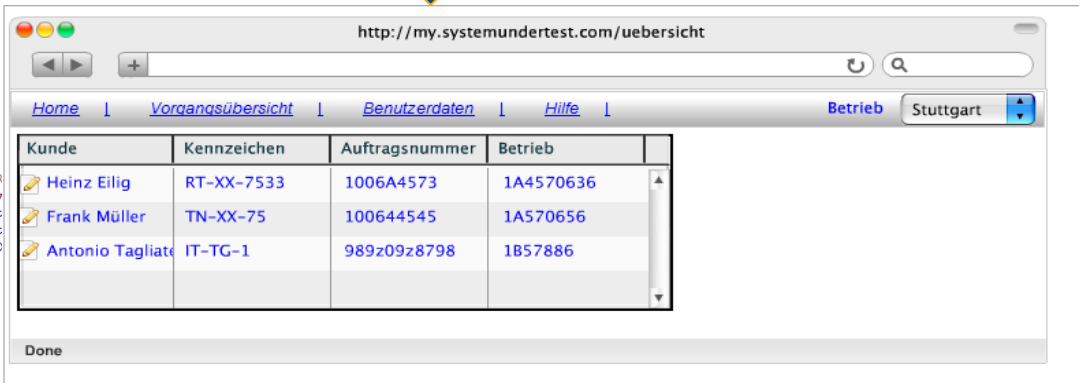
5 - Automate validation & Validate frequently



The Specification including Examples & Scenarios



The Fixture as Glue Code



The System Under Test

6 - Evolve a living documentation system

You can find the manual of the application here...

…but be aware that it is a bit outdated!

6 - Evolve a living documentation system

Important factors

- Focus on business-process documentation
- Consistent information, in sync with software system
- Organized for easy access
  - Current iteration
  - Features implemented previously

Executable artifacts of Specification By Example  **Living Documentation**

GREENPEPPER 4

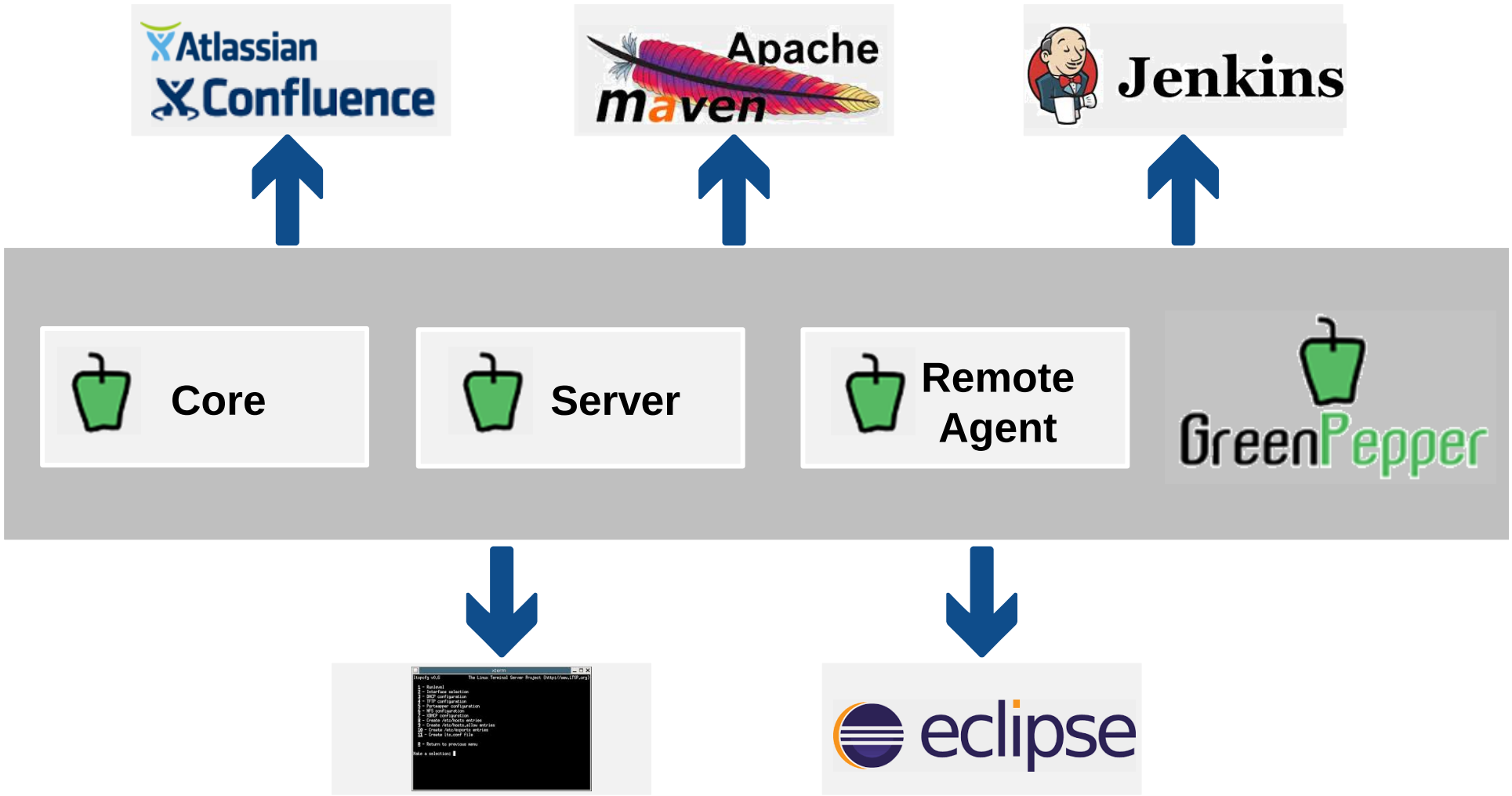
GreenPepper - History

Version 1.0	Version 1.1…	Version 3.0	Version 4.0
▪ Initial Release Juli 2006 ▪ Greenpepper Server ▪ Confluence Plugin	▪ 2nd release 2007 ▪ Eclipse Plugin ▪ Maven Plugin ▪ Improved documentation	▪ Last release 2012 ▪ Confluence 4.x plugin	▪ Updated plugin for Confluence 5.x ▪ Updated eclipse plugin ▪ Release planned for April 2015

"GreenPepper promises to deliver optimal investment in documentation by easily turning it into executable tests."

https://github.com/greenpeppersoftware

GreenPepper – Architecture and Components



GreenPepper – Calculator Example

GreenPepperized ☑ - CONFIGURE Implemented version: v.1

Source Requirements: (None) - EDIT

Execute For [Demo EDIT]

Rights: 19 Wrongs: 1 Errors: 0

Calculator Example

The main purpose of this example is to show you :

- How to handle business rules using the 'Rule For' Interpreter
- How to use the keyword 'error' to handle exceptions

The simplicity of the Calculator example allows to avoid confusion between the system context and the specific behavior of GreenPepper Software.

Rule for	calculator				
x	y	sum?	product?	quotient?	difference?
0	0	0	0	error	0
1	0	1	0	error	**Expected:** 2 **Received:** 1
0	1	1	0	0	-1
1	1	2	1	1	0
10	2	12	20	5	8

GreenPepper - Interpreters

Rule validation („Rule for“)

- Express concrete and measurable business rules

List validation (“List of”, “Set of”, “Superset of”, “Subset of”)

- Express any kind of groups, lists or sets of values

Workflow validation („Do with“)

- Express interactions with the system under development performed in a particular order (business flow)

Scenario specification („Scenario“)

- Express interactions with the system under development performed in a particular order (business flow)

Context definition („Setup“)

- Simplify creation of a particular state for the system under development

Advanced („Bullet List“, „Number List“)

- Expression of rules in bullet list format or number list format

GreenPepper – „Rule for“ interpreter

Calculator Example

The main purpose of this example is to show you :

- How to handle business rules using the 'Rule For' Interpreter
- How to use the keyword 'error' to handle exceptions

Rule for	calculator				
x	**y**	**sum?**	**product?**	**quotient?**	**difference?**
0	0	0	0	error	0
1	0	1	0	error	1
0	1	1	0	0	-1
1	1	2	1	1	0
10	2	12	20	5	8

GreenPepper – „Do with“ interpreter

Account Management Example

do with	Bank				
open checking account	12345-67890	under the name of	Bart		Simpson
check	that balance of account	12345-67890	is	$0.00	
deposit	$100.00	in account	12345-67890		
check	that balance of account	12345-67890	is	$100.00	
withdraw	$50.00	from account	12345-67890		
check	that balance of account	12345-67890	is	$50.00	
reject	withdraw	$75.00	from account	12345-67890	
check	that balance of account	12345-67890	is	$50.00	
accept	withdraw	$25.00	from account	12345-67890	
display	the balance of account	12345-67890	$25.00		

end

GreenPepper – „Scenario“ interpreter

Account Management Examples

Scenario	Bank
I have a checking account 12345-67890 under the name of Bart Simpson	
The balance of account 12345-67890 is $0.00	
I deposit $100.00 in account 12345-67890	
The balance of account 12345-67890 is $100.00	
I withdraw $50.00 from account 12345-67890	
The balance of account 12345-67890 is $50.00	
I can't withdraw $75.00 from account 12345-67890	
The balance of account 12345-67890 is $50.00	
I can withdraw $25.00 from account 12345-67890	
Show the balance of account 12345-67890	$25.00

end

GreenPepper – „List of“ and „Subset of“ interpreters

List Of Example

We list all PhoneBookEntry found in the PhoneBook in the same order as it was added to the list.

list of	phone book	
First Name	**Last Name**	**Number**
Fred	Flintstone	(123) 456-7890
Barney	Rubble	(123) 321-7666
Great	Gazoo	(123) 989-4455

Subset Of Example

We confirm using the `subset of` interpreter that `Wilma Flintstone` now belong to our list of contact.

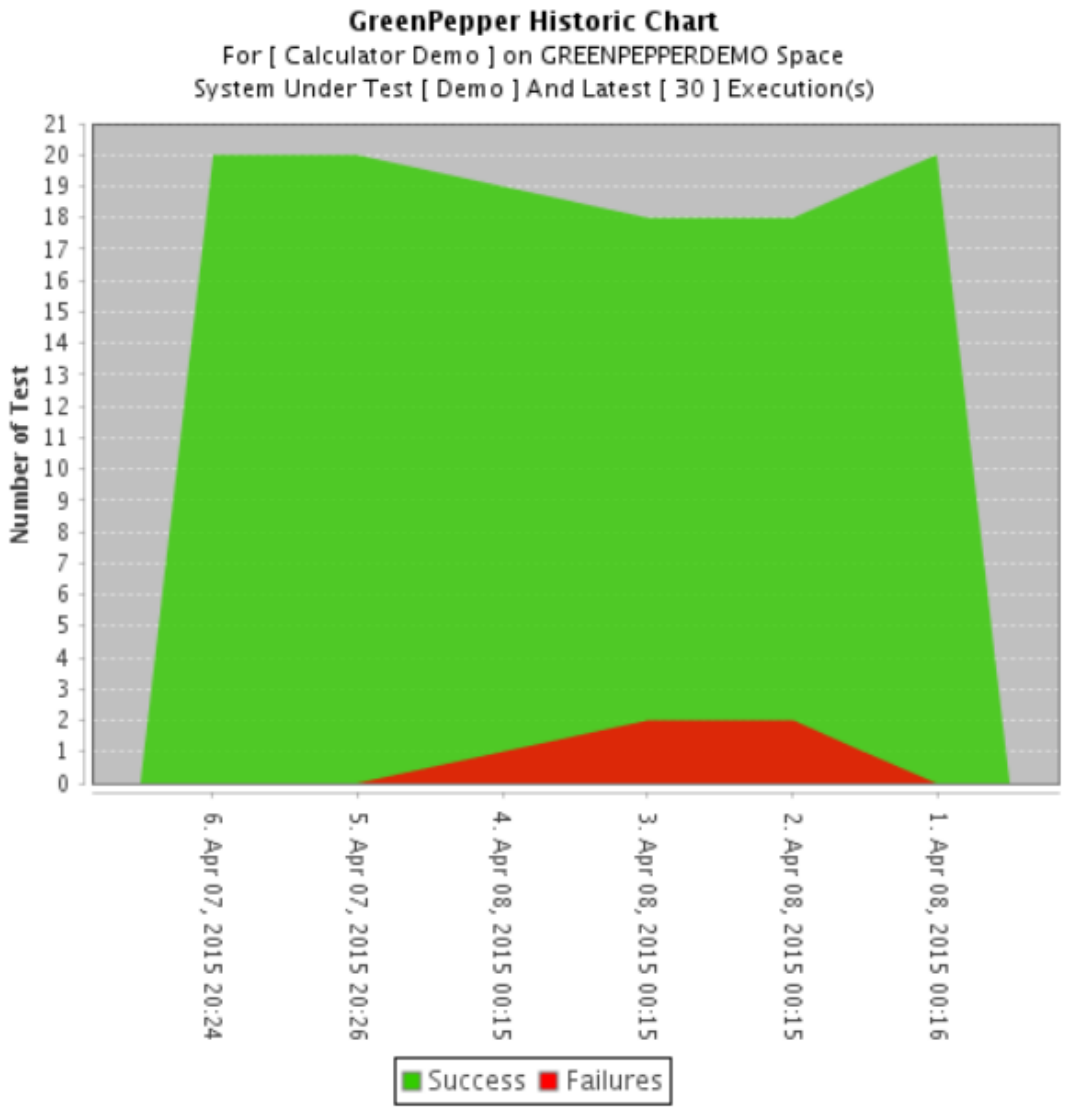
subset of	phone book entries	
First Name	**Last Name**	**Number**
Wilma	Flintstone	(123) 567-8904

GreenPepper – „Setup“ interpreter

Setup Example

setup	phone book
contact	
Fred, Flintstone, (123) 456-7890	*Entered*
Barney, Rubble, (123) 321-7666	*Entered*
Great, Gazoo, (123) 989-4455	*Entered*

GreenPepper – „Historic Chart“ Macro



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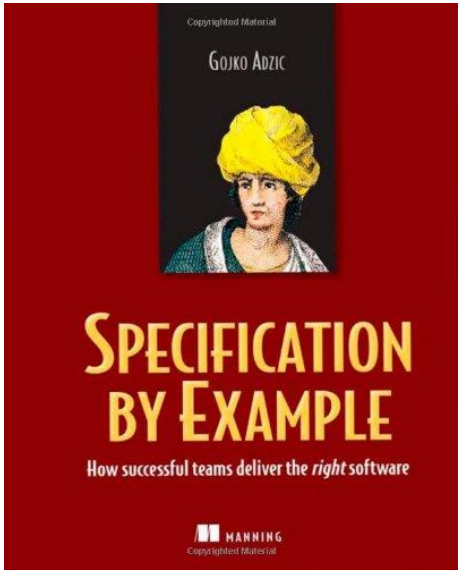
Specification By Example

- Blog von Gojko Adzic
  http://gojko.net
- Trainings bei NovaTec:
  http://www.novatec-gmbh.de/trainings/specification-by-example



GreenPepper

- Release 4.0 voraussichtlich im April 2015
- http://blog.novatec-gmbh.de
- @NT_AQE

GreenPepper

Questions?

…See you at the Workshop!

VIELEN DANK FÜR IHRE AUFMERKSAMKEIT
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