7th UCAAT User Conference on Advanced Automated Testing

ETSI

TESTING IN SAFE® :

COORDINATE AND OPTIMIZE TEST EFFORTS WITH VISUAL ATDD - EXPERIENCE REPORT AT ORANGE

Presented by Elodie Bernard

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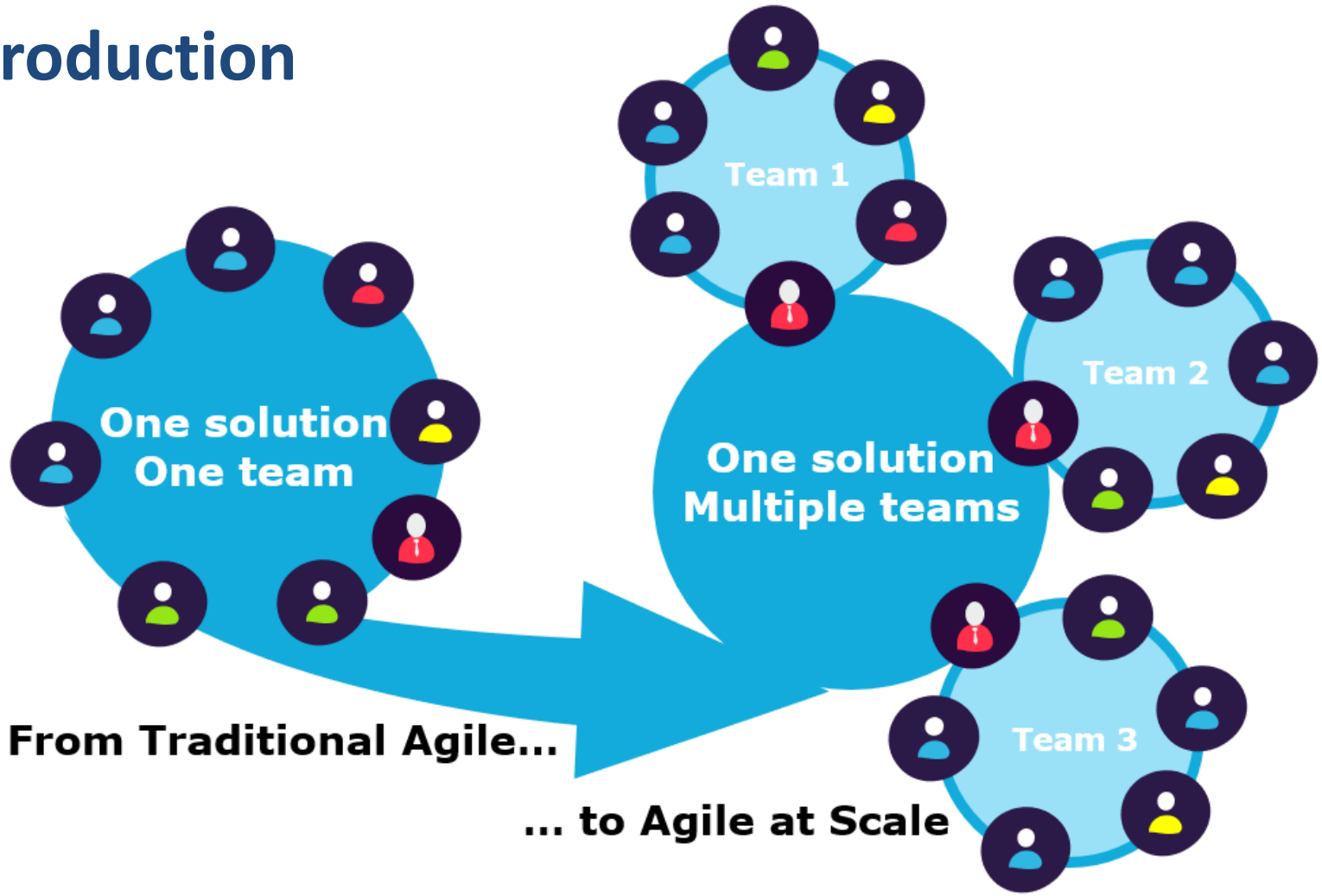
SUMMARY

- Introduction
- What does SAFe® provide to build the quality of a system?
- Challenges for test activities in SAFe®
- Coordinate and optimize testing efforts through visual ATDD and BDD at Orange
- Overview and conclusion

Introduction



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WHAT SAFE® OFFERS TO BUILD THE QUALITY OF A SYSTEM?

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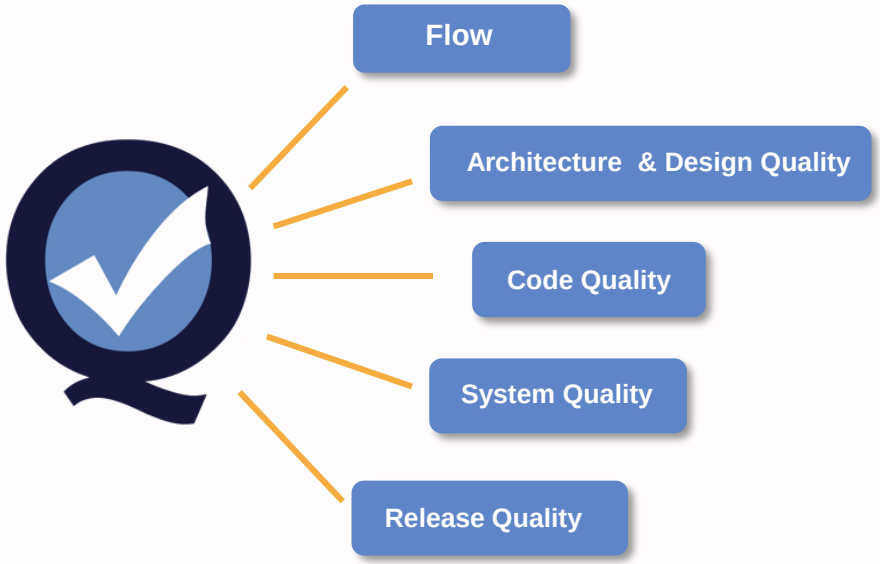
Building quality with SAFe®

Key principles

- **Key practices:**
  - Flow
  - Architecture and design quality
  - Code quality
  - System quality
  - Release quality



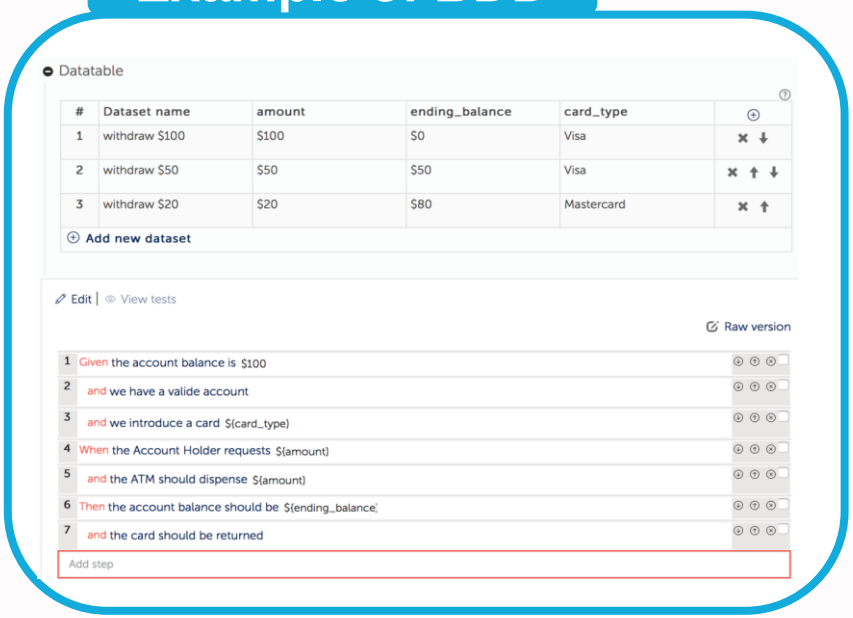
- **How to integrate them?**
  - Via the process definition
  - The BDD (Behavior-Driven Development)
  - A complete overview of Agile tests

Building quality with SAFe®

Create a continuous and efficient workflow with the BDD

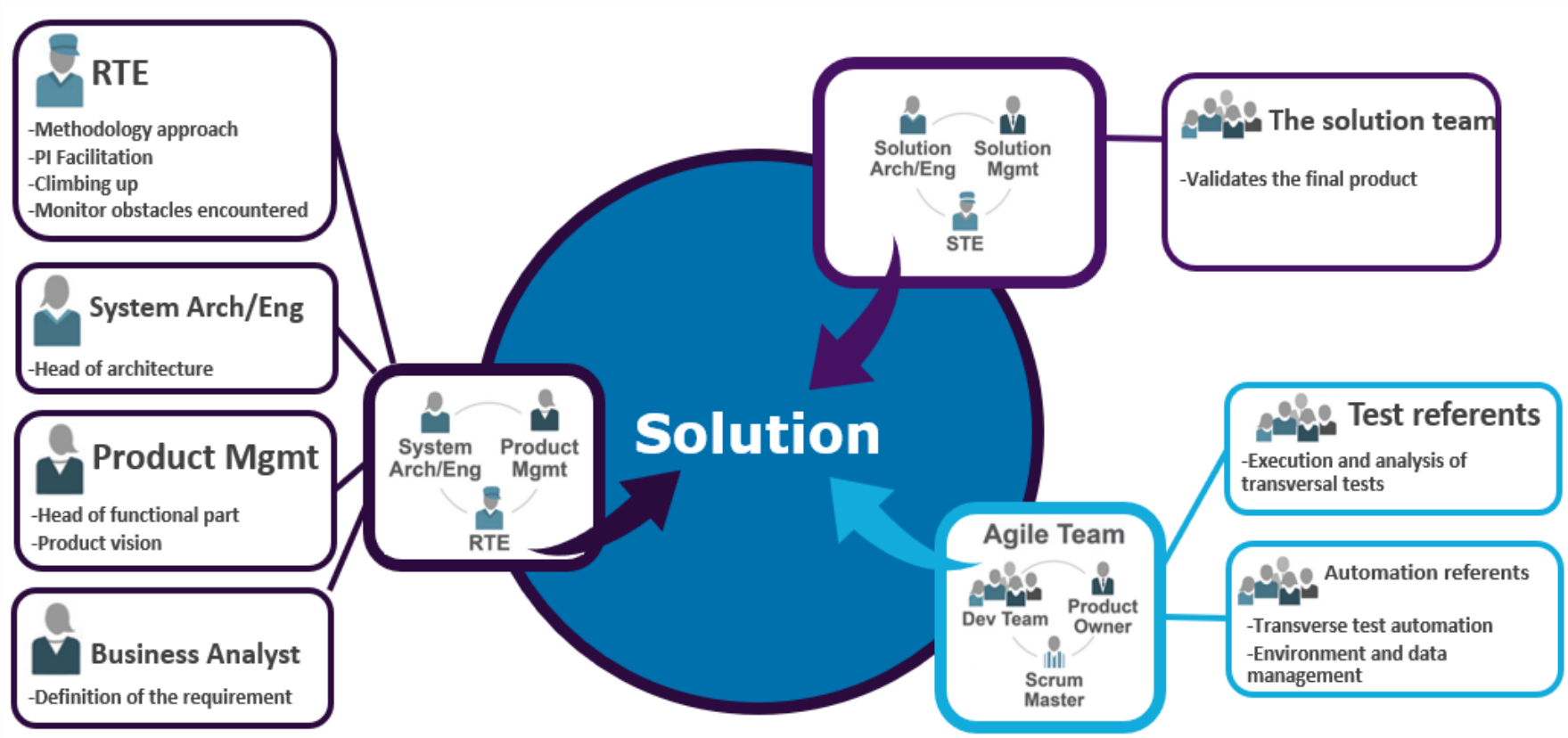
Behavior-driving development (BDD) is a collaborative process that creates a common understanding of requirements between the business and the development team.

Example of BDD



Building quality with SAFe®

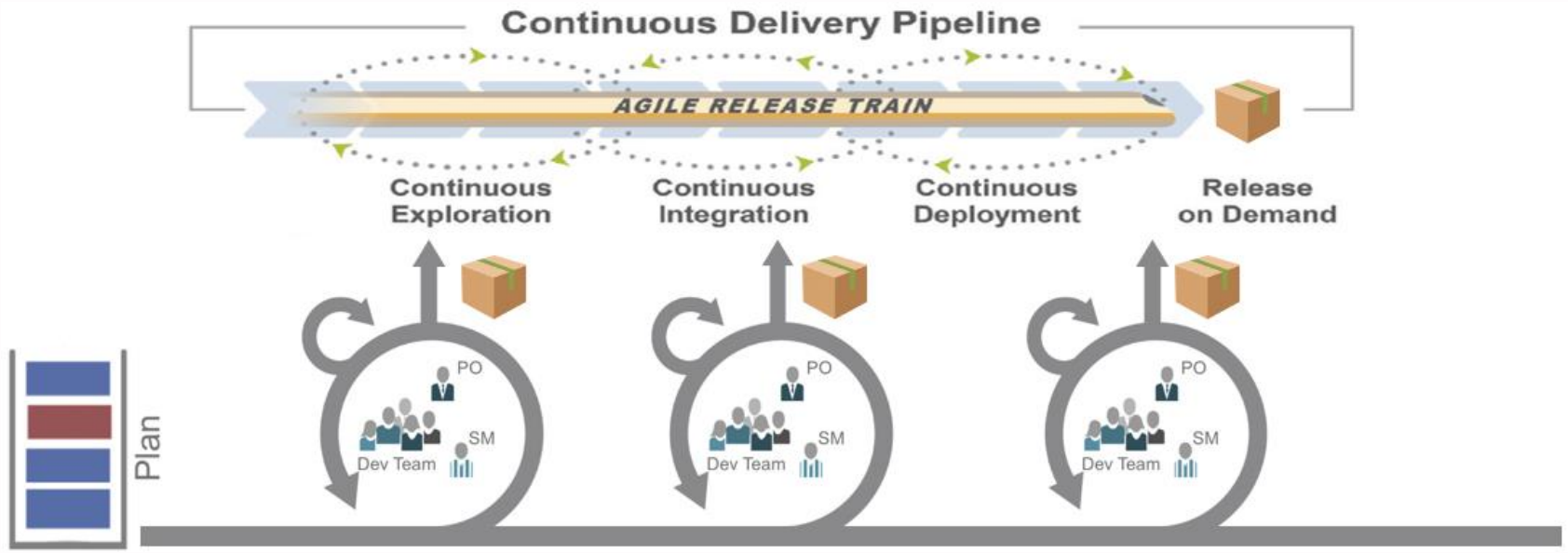
The team



Building quality with SAFe®

Mastering Agile teams with Scrum and Kanban

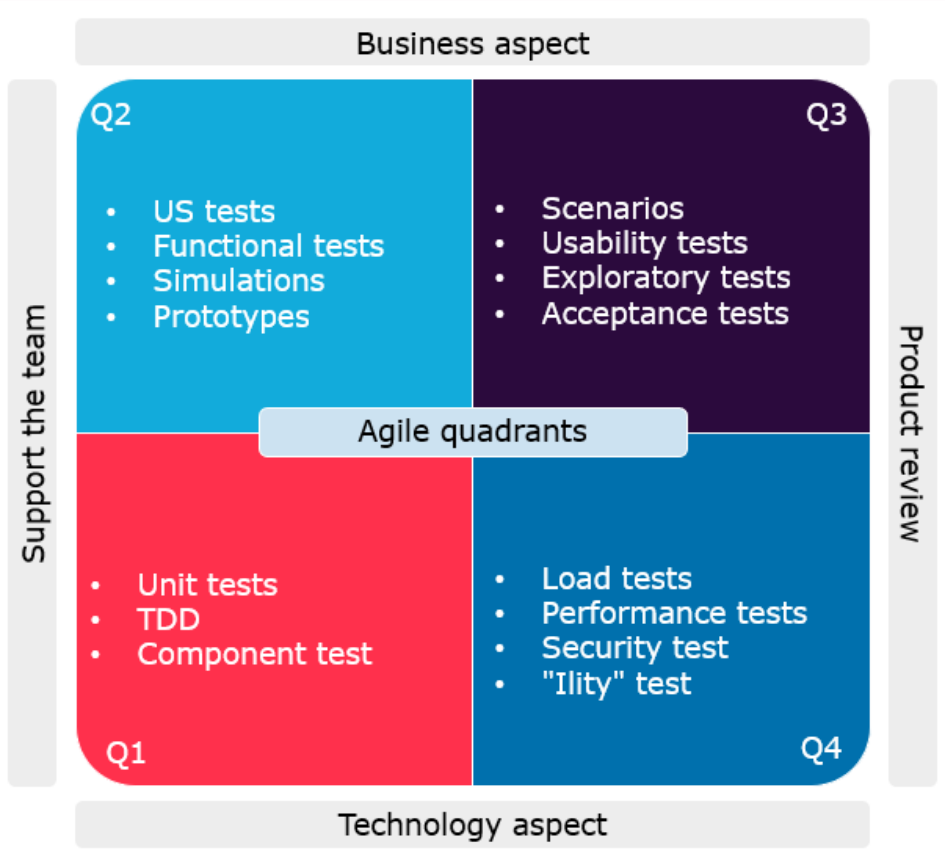
- Agile teams are self-organized.
- They define, build, test, deploy increments of the final product.



Building quality with SAFe®

Agile testing

- The use of these four quadrants (Q1 to Q4) promotes the development of a comprehensive strategy that contributes to quality assurance.
- Quadrants Q1 and Q2 contain respectively articles TDD and BDD of SAFe.
- Continuous integration provides more information on the Q3 quadrant.
- Non-functional requirements, continuous integration, and on-demand versions provide more information on the Q4 quadrant.



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CHALLENGES FOR TEST ACTIVITIES IN SAFE®

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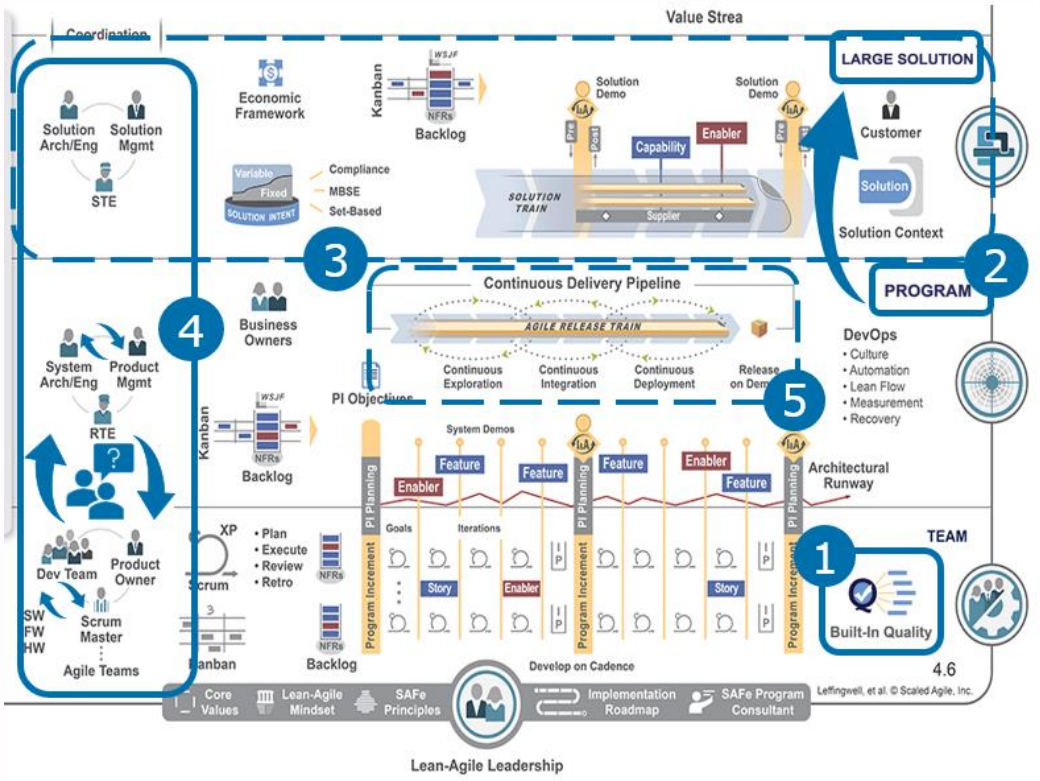
Challenges for test activities in SAFe®

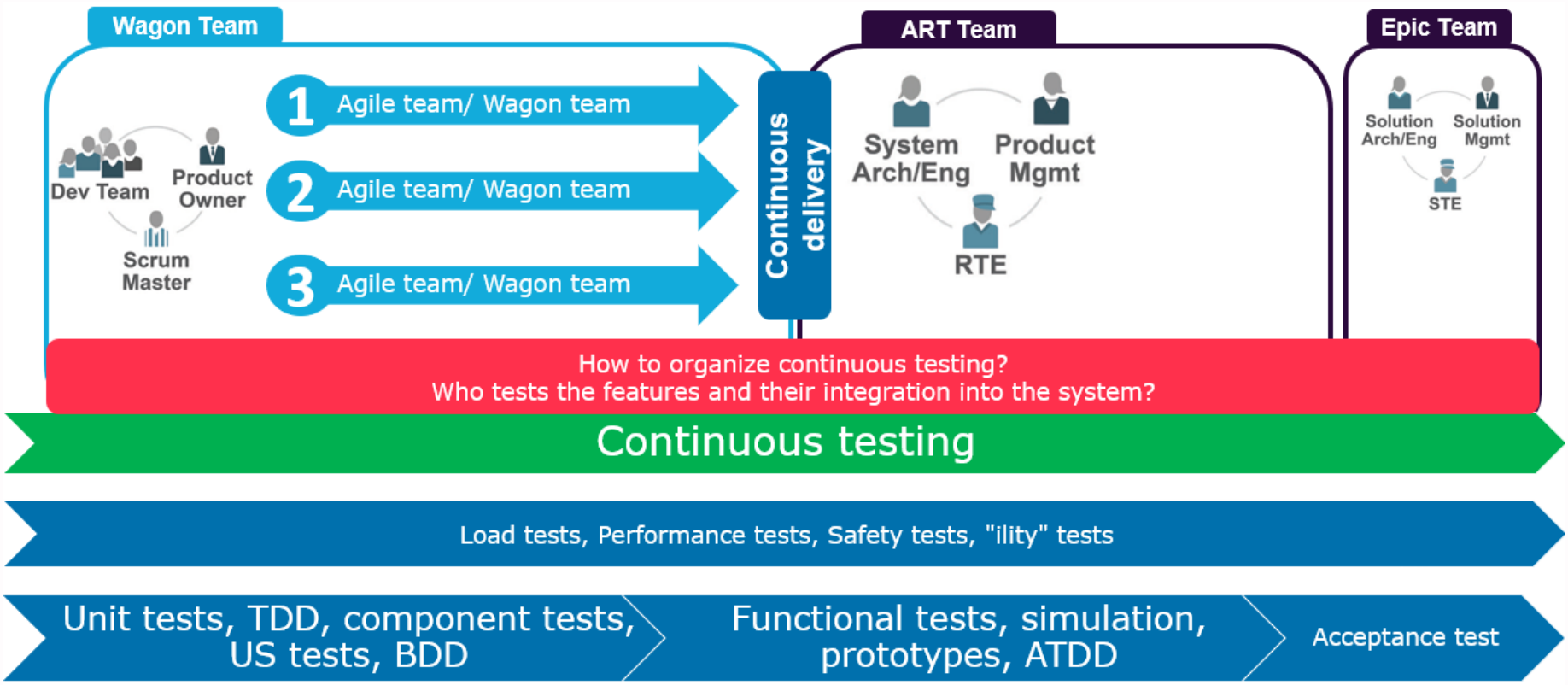
Activities and roles at the test level are not well defined in SAFe®



1. Test activities not well defined
2. Switch from an application QA vision to a solution QA
3. Need to secure the right vision of the solution
4. Need to coordinate test levels between teams
5. Importance of train-level tests to ensure the integration of wagons on the train

Challenges for test activities in SAFe®

Challenges of the testing strategy in SAFe®



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COORDINATE AND OPTIMIZE TESTING EFFORTS THROUGH VISUAL ATDD AND BDD

ORANGE EXPERIENCE

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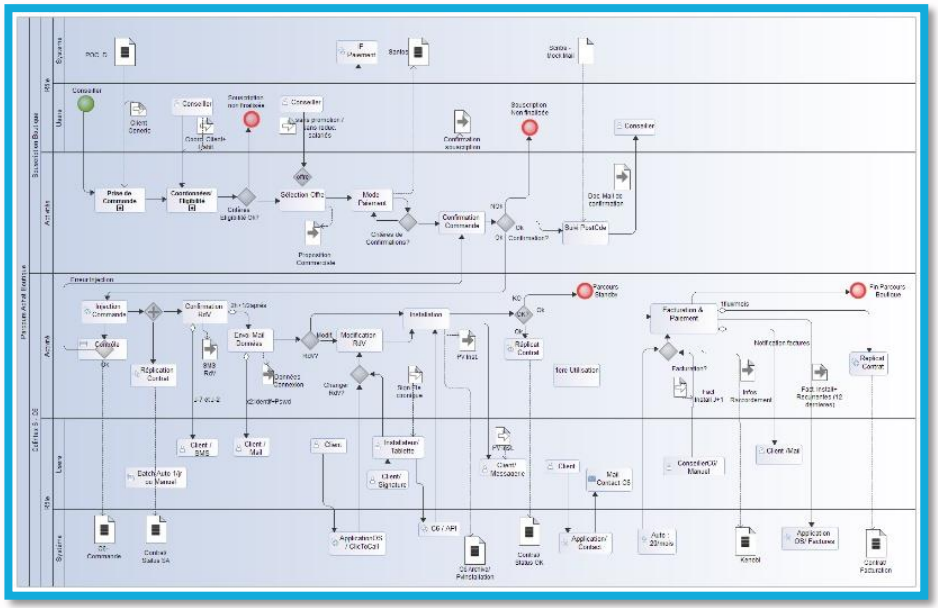
From BPMN to visual ATDD

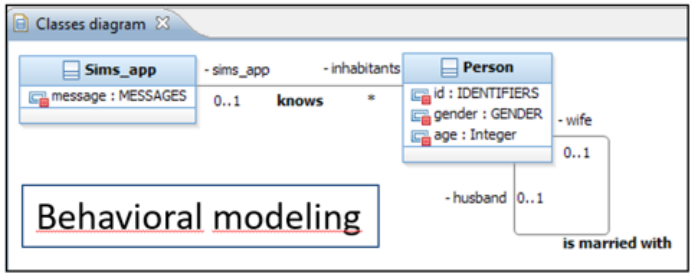
Constat

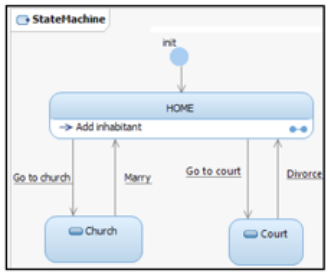
- BMPN(Business Process Model and Notation) is initially used
- These models represent the different features of the system and their interaction
- **The strong point of this technique :**
  - made it possible to clarify the need
- **The weaks points of this technique :**
  - it does not allow to vary the level of abtraction easily
  - not make it possible to include testing phase
  - does not allow communication adapted to each level of the train

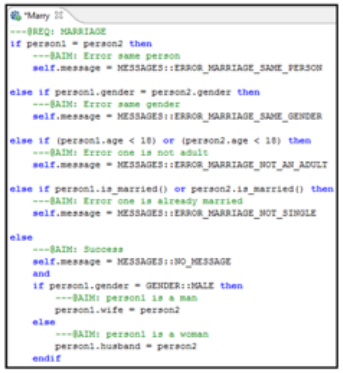


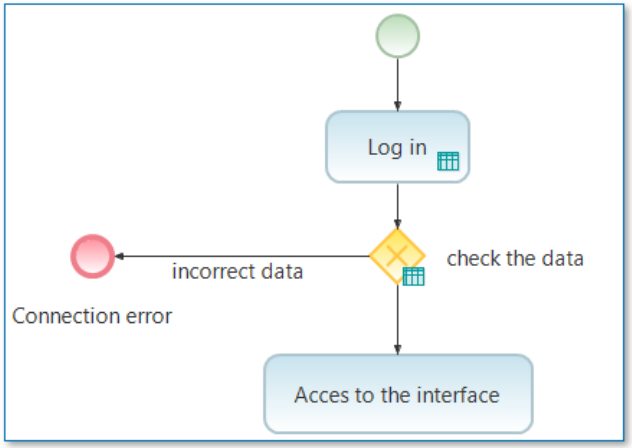
From BPMN to visual ATDD

Visual ATDD ?







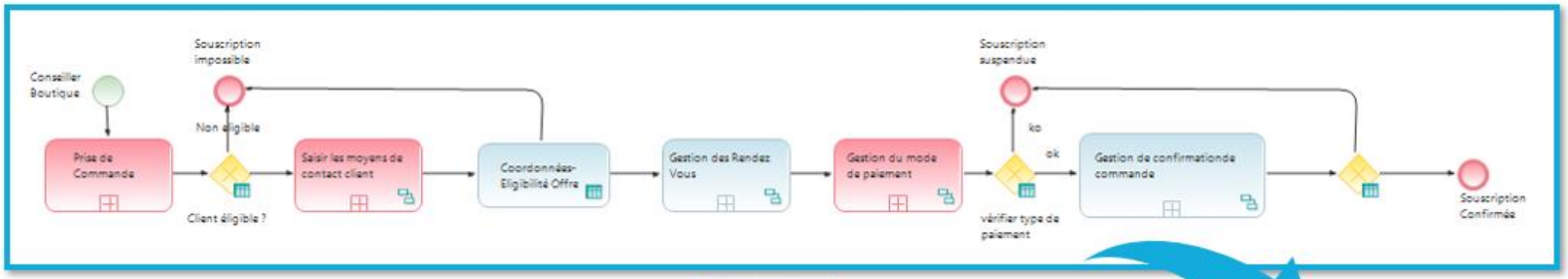


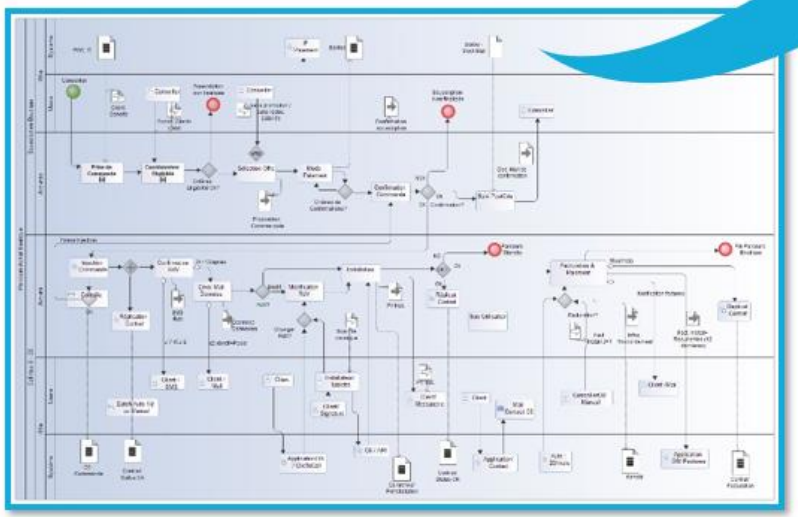
	id	password	Test steps		Outcome
1	correct	correct	1 Check the data	The data are correct	→ Access to the application
2	correct	incorrect	1 Check the data	The data are incorrect	check the data → incorrect data → Connection error
3	incorrect	incorrect	1 Check the data	The data are incorrect	check the data → incorrect data → Connection error

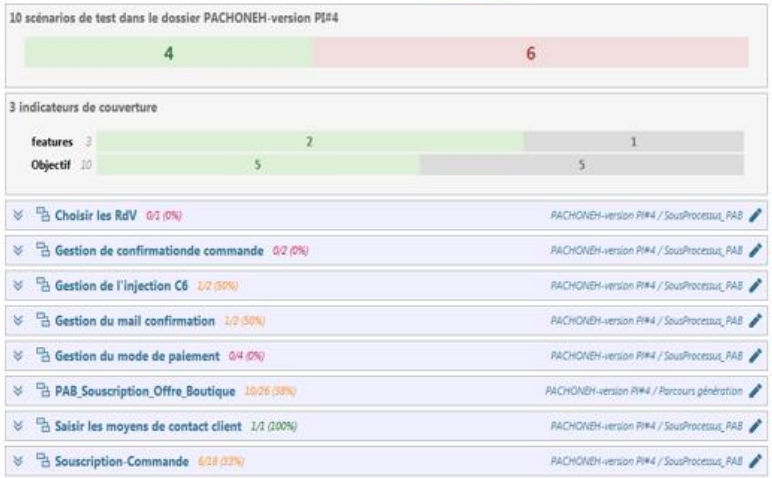
From traditional MBT practices to a lean approach: **the visual ATDD**

From BPMN to visual ATDD

Solution

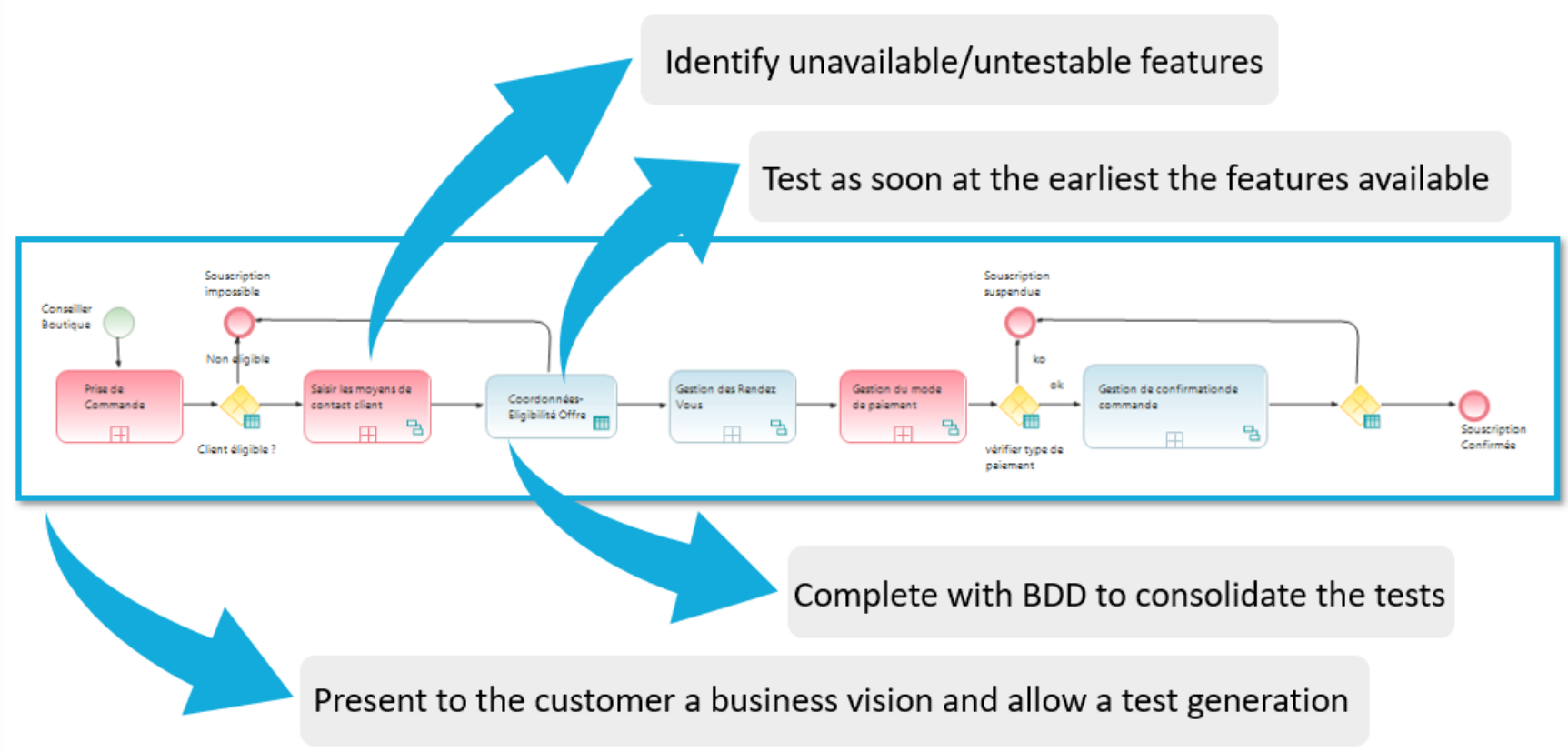






From BPMN to visual ATDD

Via ATDD



Coordinate and optimize testing efforts through *visual ATDD and BDD*

BDD

Datatable

#	Dataset name	amount	ending_balance	card_type
1	withdraw $100	$100	$0	Visa
2	withdraw $50	$50	$50	Visa
3	withdraw $20	$20	$80	Mastercard

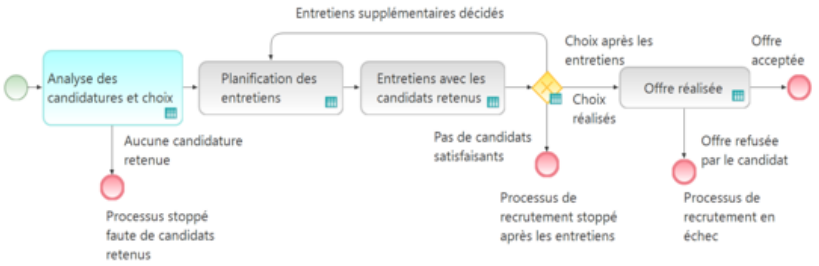
Add new dataset

Edit | View tests

Raw version

```
1 Given the account balance is $100
2   and we have a valide account
3   and we introduce a card ${card_type}
4 When the Account Holder requests ${amount}
5   and the ATM should dispense ${amount}
6 Then the account balance should be ${ending_balance}
7   and the card should be returned
Add step
```

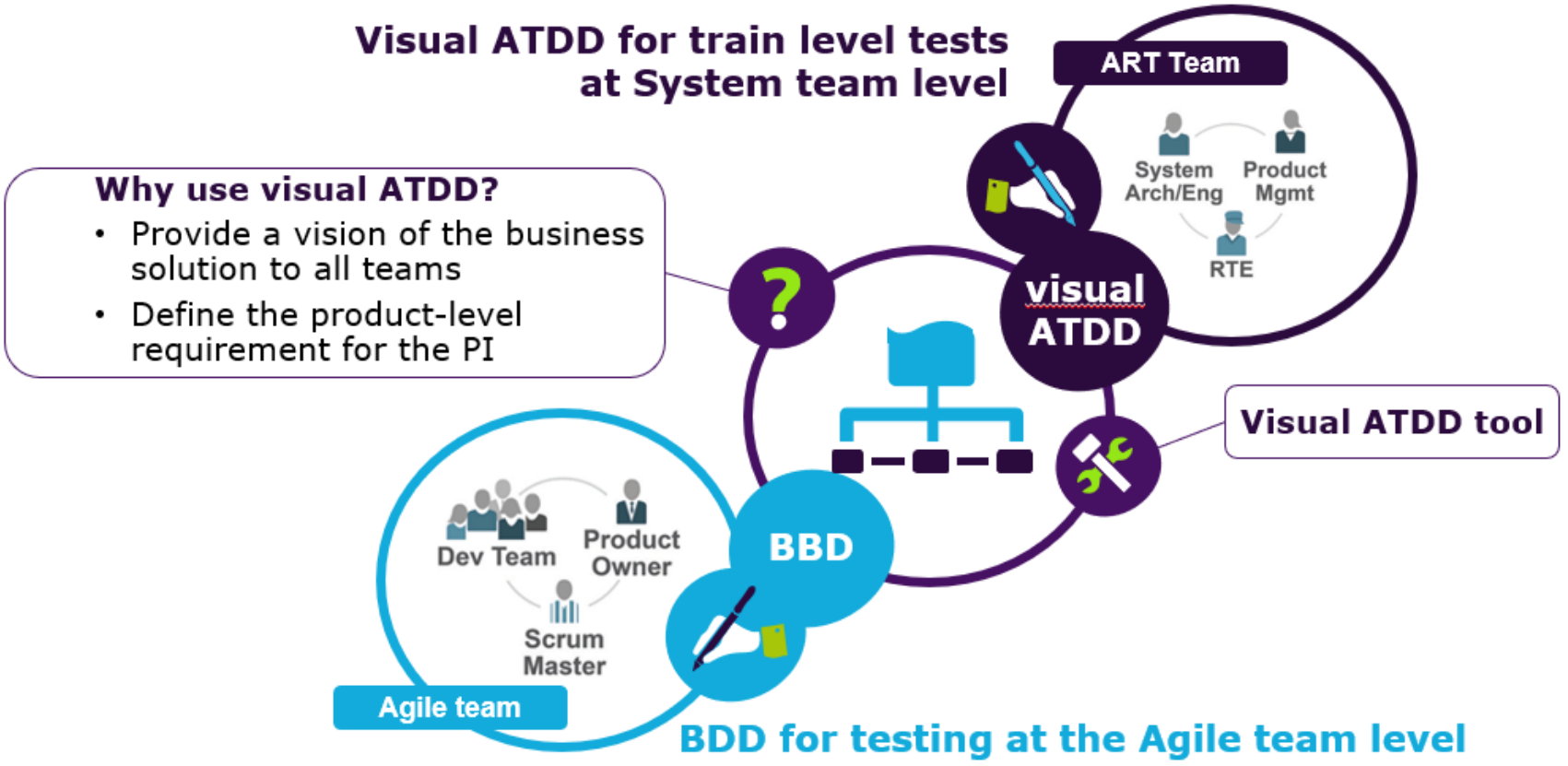
Visual ATDD



	CV_Anonyme	Etapes de test		Direction suivante	User Story
1	Non	1 Evaluation CV par les	Check - Evaluations saisies et	→ Planification des entretiens	http://disc.univ-fcomte.fr/jira/browse/SELECTION-1
2	Oui	1 Evaluation CV par les	Check - Evaluations saisies et	→ Planification des entretiens	http://disc.univ-fcomte.fr/jira/browse/SELECTION-1
3	Non	Evaluation CV par les intervenants	Check - Evaluations saisies et	Analyse des candidatures et choix → Aucun	http://disc.univ-fcomte.fr/jira/browse/SELECTION-1

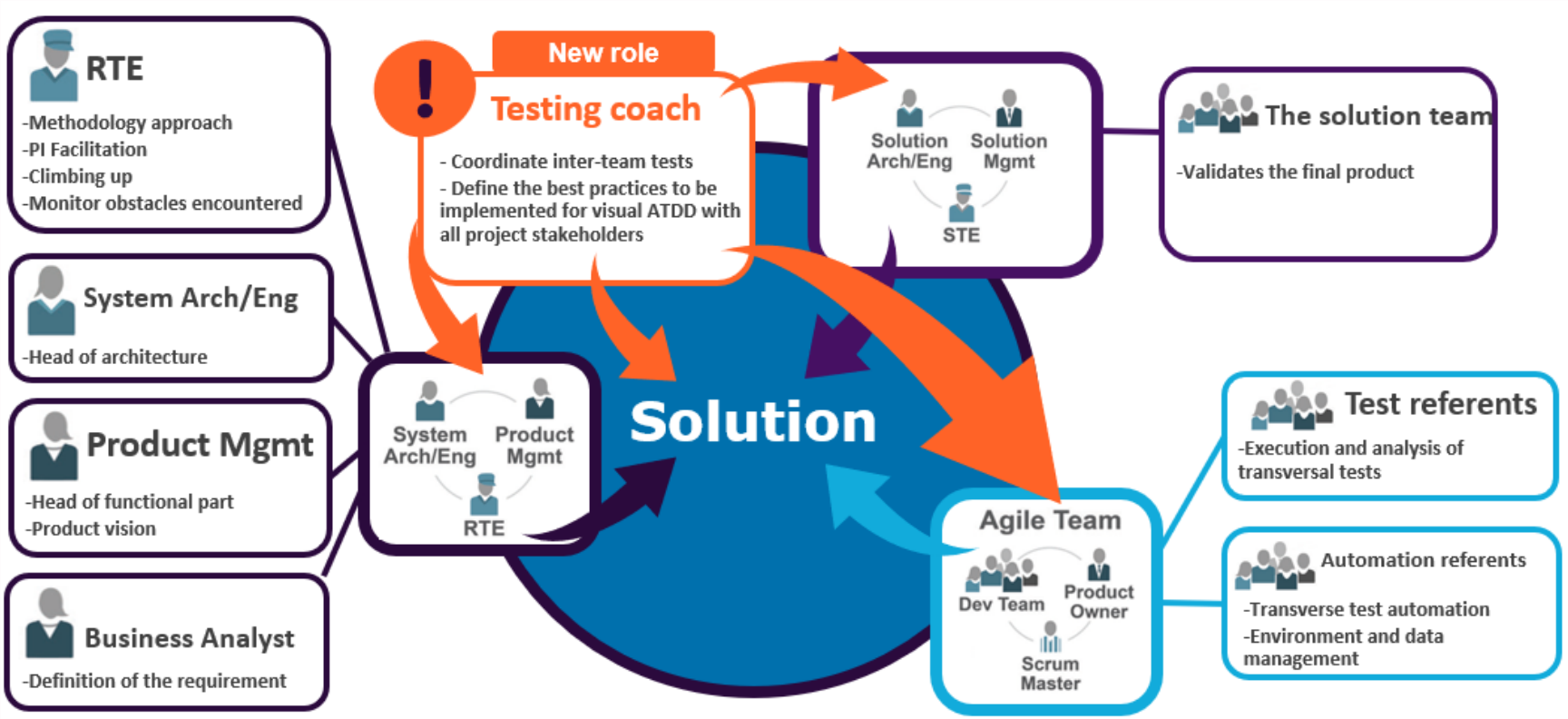
Visual ATDD makes it possible to model business processes and thus strengthen and optimize communications in a SAFe® context

Coordinate and optimize testing efforts through visual ATDD and BDD



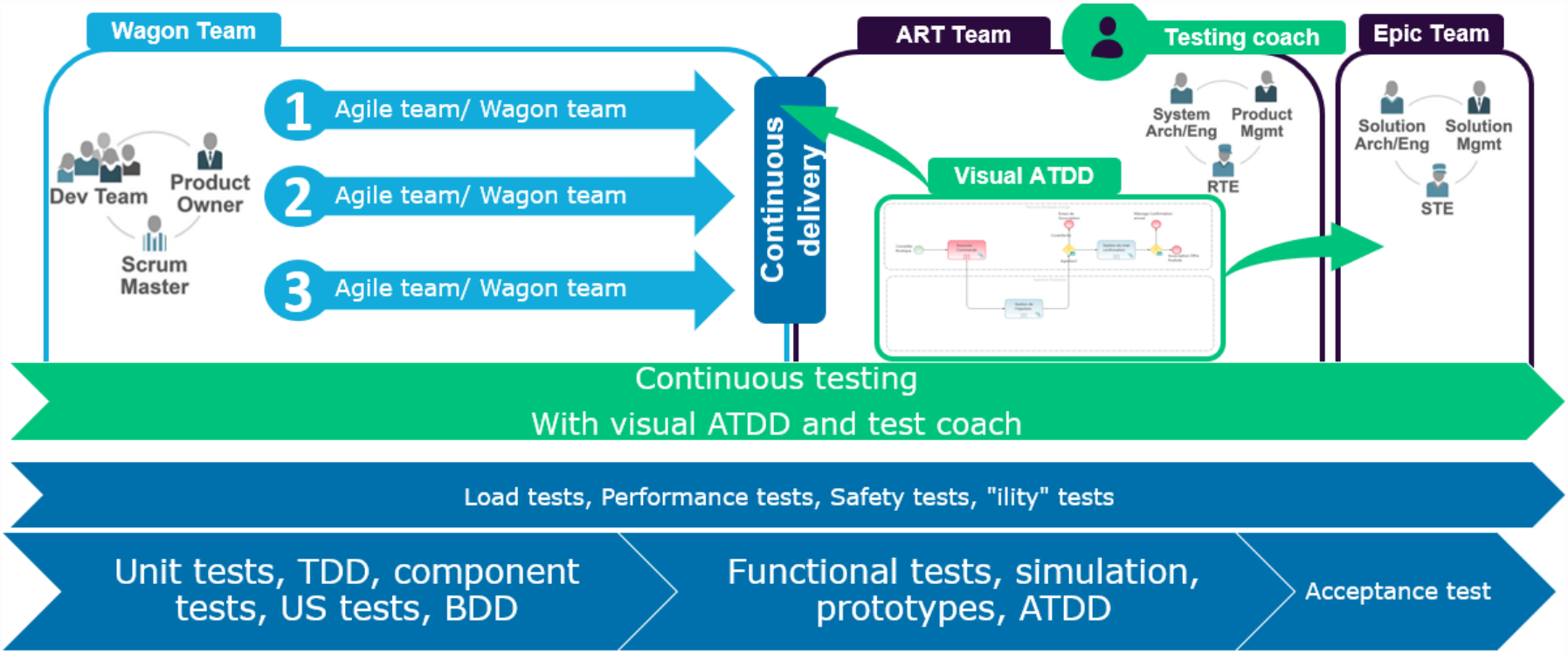
ATDD and BDD two complementary and synergistic approaches

Coordinate and optimize testing efforts through visual ATDD and BDD



The testing coach

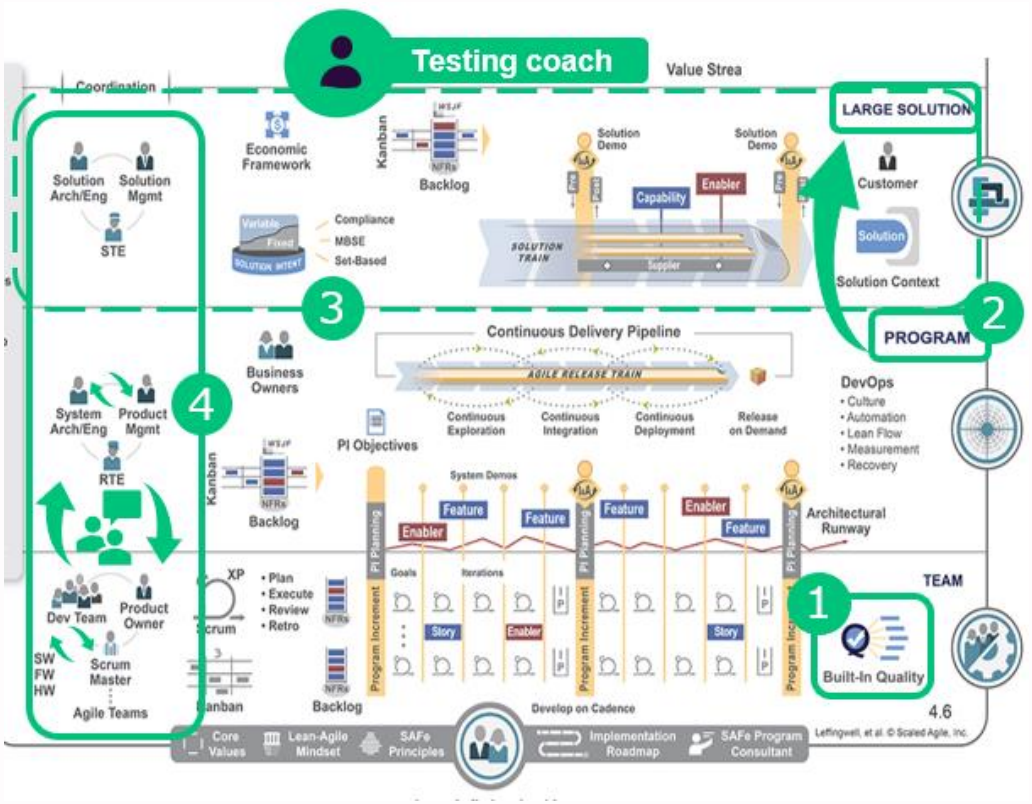
Coordinate and optimize testing efforts through visual ATDD and BDD



Test strategy

Overview and conclusion

With visual ATDD :



1. The roles related to the test are better defined through the addition of a "Testing coach" role to coordinate the tests.
2. It is easier to switch from an application QA vision to a solution QA with visual ATDD and its different levels of abstraction.
3. The vision and communication of the solution are strengthened by shared modeling
4. Models can represent the progress of the different test levels according to the teams and thus better coordinate them