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ETSI World Class Standards

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MASTERING FUNCTIONAL COMPLEXITY WITH MODEL-BASED TESTING USING BPM

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sopra steria

BRIEF OVERVIEW OF SOPRA-STERIA

- A European leader in IT
- A large portfolio of offers:
  - Consulting, Systems Integration, Software Development, Infrastructure Management and Business Process Services
- 37,000 employees in over 20 countries
- €3.4 billion of revenue in 2014
- www.soprasteria.com

JEROME SAADA : BRIEF BIO

- Project manager
- Tests designer
- Smartesting architect
- Domains: energy, banking, human resources, transport and real estate

SUBJECT OF THE SPEECH (IN BRIEF)

- A return of experience of a 3-year project i.e. real-life, practical information
- IT domain (real estate software for …..)
- Implementation of a Model-Based Testing solution (Smartesting)

PLAN OF THE PRESENTATION

- Context: description of the project
- Description of the solution
- Conclusion

CONTEXT : Description of SUT

- “Build” project of a specific ERP integrated with 20 other applications used by the customer
- Real Estate
- Microsoft Biztalk and SQL Server
- Project start-end mid-2012 to end-2016

CONTEXT : Planning 4 releases

- V0a core 1 module 4 DFS delivered mid-2013
- V0 core + 6 modules 18 DFS delivered mid-2014 latest release shipped to client
- V1 core + 11 modules
  integrated with 20 other applications
  54 DFS – 20 TIS delivery planned nov-2015
- V2 international and evolutions release
  plan to mid-2016

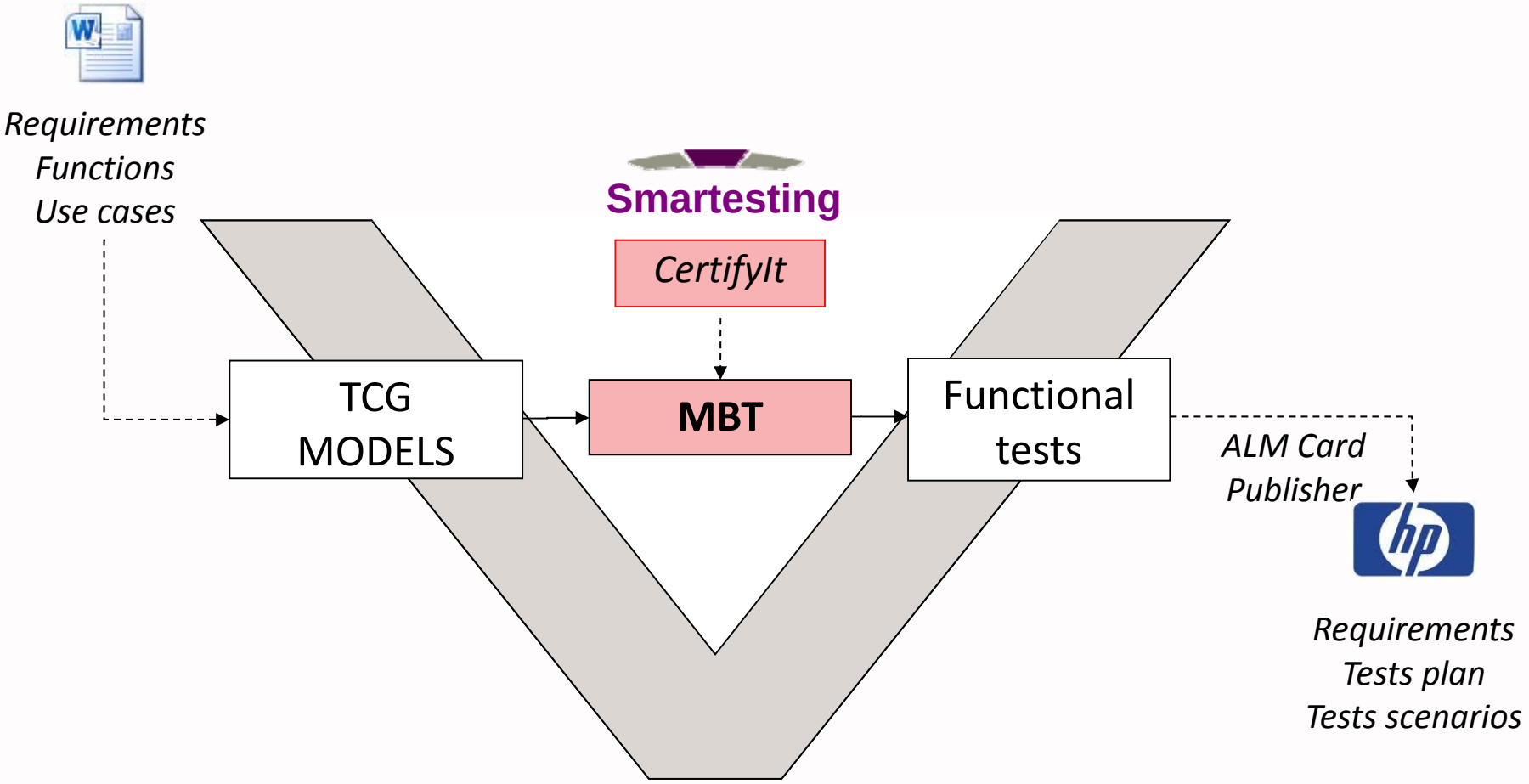
CONTEXT : Keys metrics of the project

- V0
  - 5 tests designers for 8 months
  - 1.500 requirements - 6.000 test cases - 1.700 test scenarios
- V1
  - 7 tests designers for 12 months
  - 54 DFS – 20 TIS (50 to 550 pages) – 8.500 pages
  - 7.000 requirements - 9.000 test cases - 3.000 test scenarios
  - Functional, performance et integration tests

CONTEXT : Main challenges

- Achieve an optimized test coverage as per risk analysis
- Meet the deadlines
- Manage the volume industrially
- Use the same method by all test designers
- Improve the factorization

DESCRIPTION OF THE SOLUTION



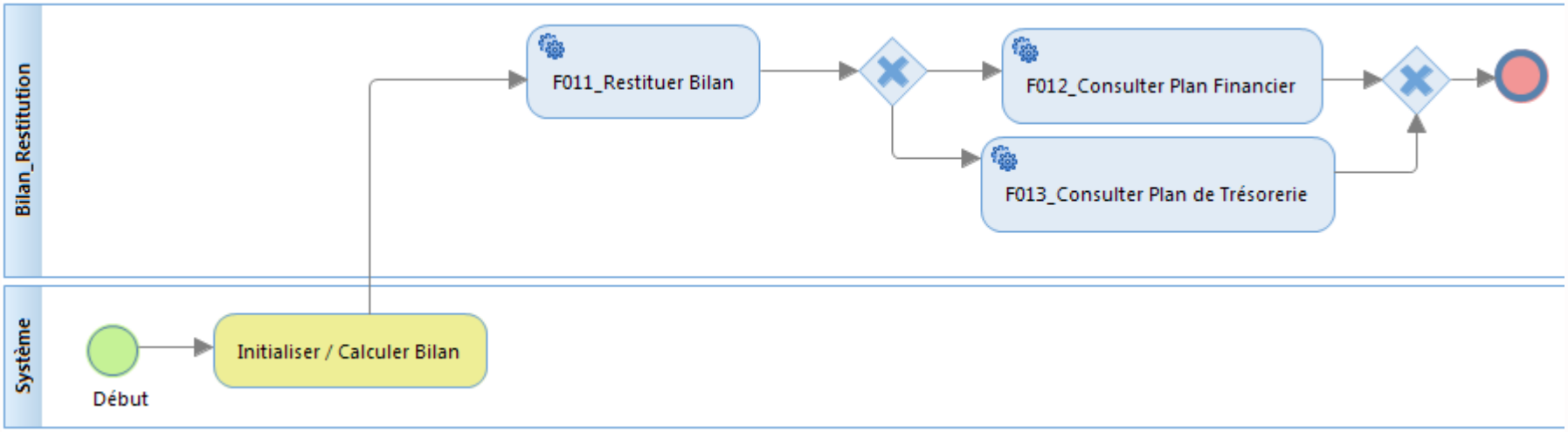
DESCRIPTION OF THE SOLUTION
Functional work

- The production of tests plans depends on the DSF
- DFS translate business needs in :
  - Functions descriptions
  - Use cases and diagrams activities
  - Sequence interfaces
  - Functional requirements (surface, interaction and management) realized with exportable tags into Excel
  - Business services and treatments
  - Customs lists

DESCRIPTION OF THE SOLUTION
Test designers work

- Formalization of the functional workflow in a Business Process Model (using BPMN notation)
- Identification of the business rules and use cases to be tested
- Development of the TCG (Test Conception Guide) that details, for each function:
  - The prerequisites
  - The variability elements
  - Use context
  - The application workflow for each function describes in the model as an GUI action and its related expected result

DESCRIPTION OF THE SOLUTION
Modeling notation: BMN



- Represented functional level only
- Simple conditions by gateways
- Clarify the sequence of functions represented by a business action

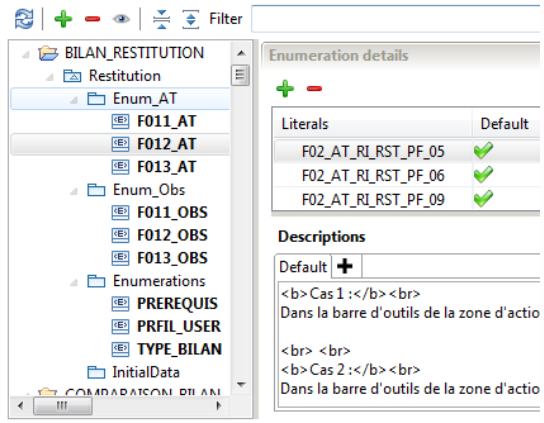
DESCRIPTION OF THE SOLUTION
Test Conception Guide

Prerequisite	Action	Observation	Cas	Requirement	Aim
F012	RI_RST_PF_05	RI_RST_PF_05	Nominal	RI_RST_PF_05	Line 0 Buton
F012	RI_RST_PF_06	RI_RST_PF_06	IHM	RI_RST_PF_06	Col Buton
F012	ERROR	ERROR	Error	RG_MOT_02	Message

- The TCG (Test Conception Guide) is reused as a decision table in the MBT tool and manual conception
  - It helps to define the test strategy
  - It helps to identify the combinatorial aspects
  - It ensures factorization
  - It helps to identify logical and physical data

DESCRIPTION OF THE SOLUTION
TCG to production BA

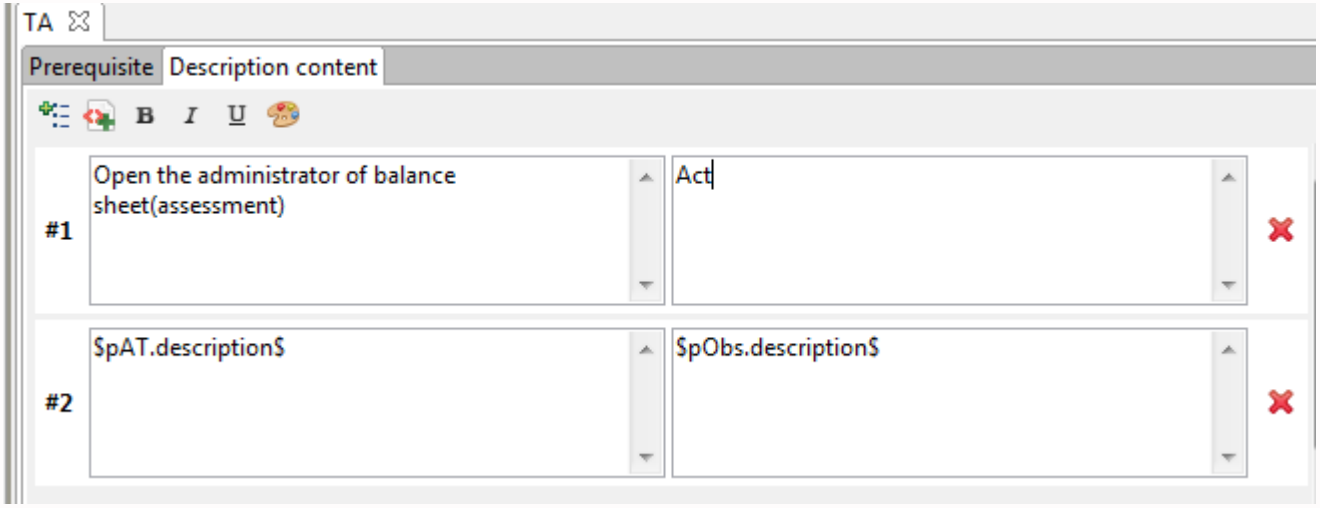
- The TCG (Test Conception Guide) is reused to prepare by import:
  - Enumerations with description (list of possible values)
  - Tag Browser (Requirements) (Traceability)
  - Decision table (BA)



	pr: PREREQUIS	pAT: F012_AT	pObs: F012_OBS	REQ	AIM	CAS	TA
6	F012	F02_AT_RI_RST_PF_05	F02_OBS_RI_RST_PF_05	RI_RST_PF_05	Bouton Ligne à 0	NOMINAL	restitution.f012consulterPF(pAT, pObs)
7	F012	F02_AT_RI_RST_PF_06	F02_OBS_RI_RST_PF_06	RI_RST_PF_06	Bouton Colonne	NOMINAL	restitution.f012consulterPF(pAT, pObs)
8	F012	F02_AT_RI_RST_PF_09	F02_OBS_RI_RST_PF_09	RI_RST_PF_09	Bouton Masquer	NOMINAL	restitution.f012consulterPF(pAT, pObs)
9	F012	F02_AT_RI_RST_PF_10	F02_OBS_RI_RST_PF_10	RI_RST_PF_10	Bouton Afficher	NOMINAL	restitution.f012consulterPF(pAT, pObs)
10	F012	F02_AT_RI_RST_PF_11	F02_OBS_RI_RST_PF_11	RI_RST_PF_11	Ergonomie	NOMINAL	restitution.f012consulterPF(pAT, pObs)

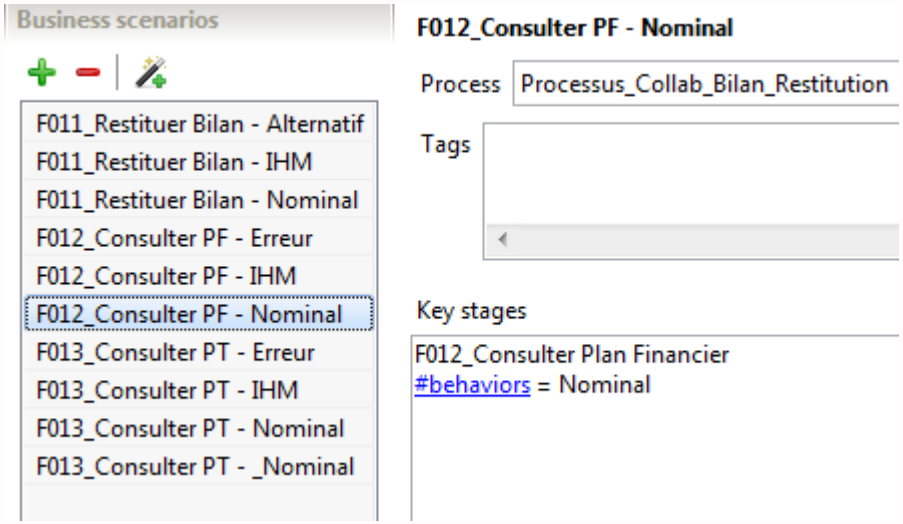
DESCRIPTION OF THE SOLUTION
TCG to production TA

- Contain several steps
- Variable fields data from decision table (BA): $pAT.description§



DESCRIPTION OF THE SOLUTION
Testing strategy and generating test cases

- Filtered on behaviour:
  - #iterate
  - #behaviour
  - #terminate

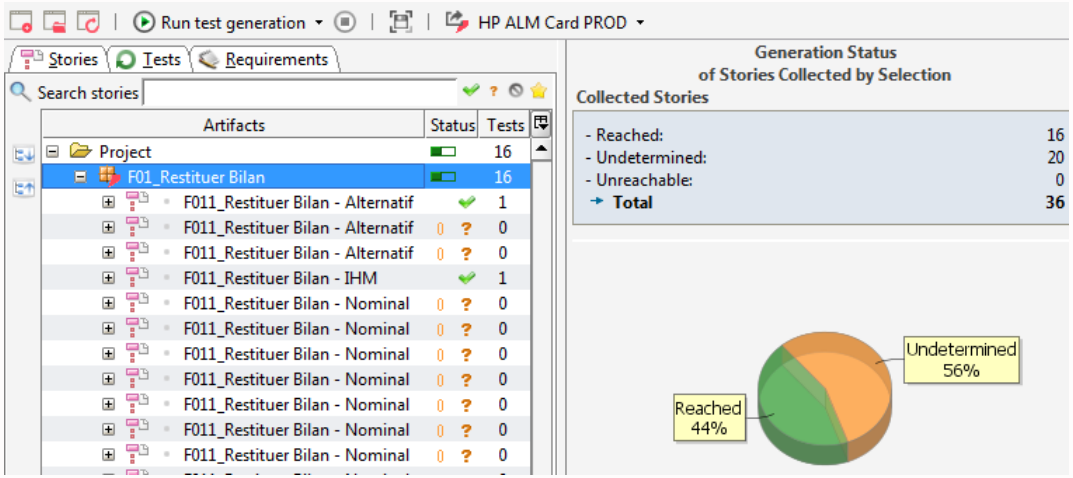


DESCRIPTION OF THE SOLUTION

CertifyIT: Generating test cases and publish

- Generating test cases

- Publishing test cases to HP ALM with ALM Card Publisher



CONCLUSION

Each point below helps test designers to do their job

- Inputs clearly structured
- BPM : communication improved between stakolders: models are easier to understand
- Realize the TCG allows an overall view and favor the factorization.

QUESTIONS ?

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