VelociRator TEST
Model-Driven Test Generator

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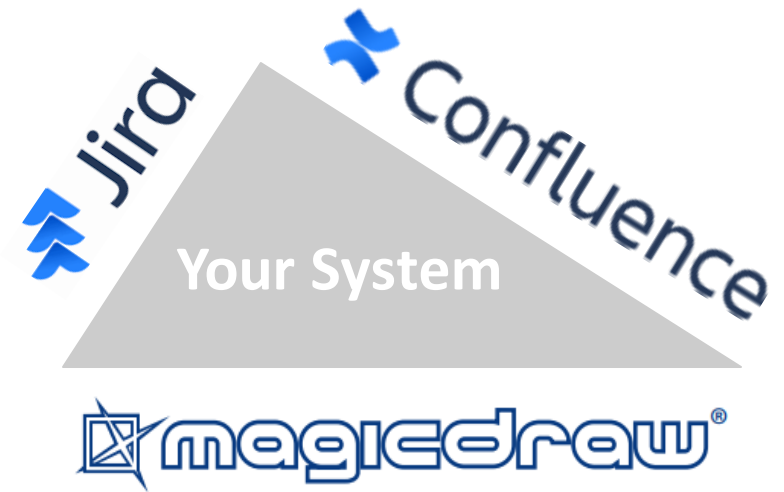 A Journey from Epic to Test

- Platform

NINKIT-CONSULTING
architecture advisory services

About Me

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„The profession of the architect is an adventurous task.

It's a job in the twilight of art and science,

on the rim of invention and memory,

between spirit for modernization and respect for tradition."

Renzo Piano, Italian architect.

Road Show

Planned Activities

- Present to Automotive PLM (Product Lifecycle)

- Article for German Testing Magazin (in cooperation with msg XQT)

- Conference on Model-Based Systems Engineering

- 2 more projects with additional requirements

- Identify partner for product development
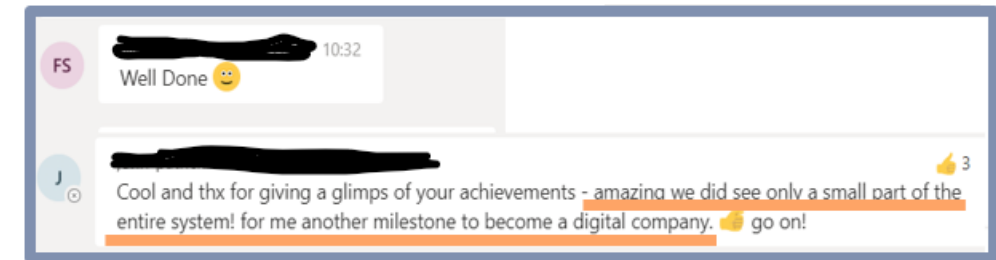
High Interest from

- Consulting & Product Development (C-level, Digital Transformation, cross-functional)

- Automotive
  - E/E (Electrical & Electronical Engineering)
  - Connected Car (already model-driven)
  - CIM (Customer Interaction Mgmt)
  - MDC (MagicDraw Community)

Identified problems

Concepts, code, and tests drift apart

- Especially in long-running & complex projects/products

- ...accelerated by agile working models

- ...due to higher frequencies of development cycles

Why do they drift apart?

1. Hands-on working style, insufficiently connected tools

   – Like e.g. Scrum with Jira, Confluence, Powerpoint, Visio, Gliffy, Word, Excel, etc

2. Missing refactoring capability for tests

   1. Compare to coding with powerful IDEs

   2. Same concept / test described in many places

3. Missing refactoring capability for concepts

   1. Same concept by same name.

   2. Many tests for one concept.

What does the Customer say (PoC)?
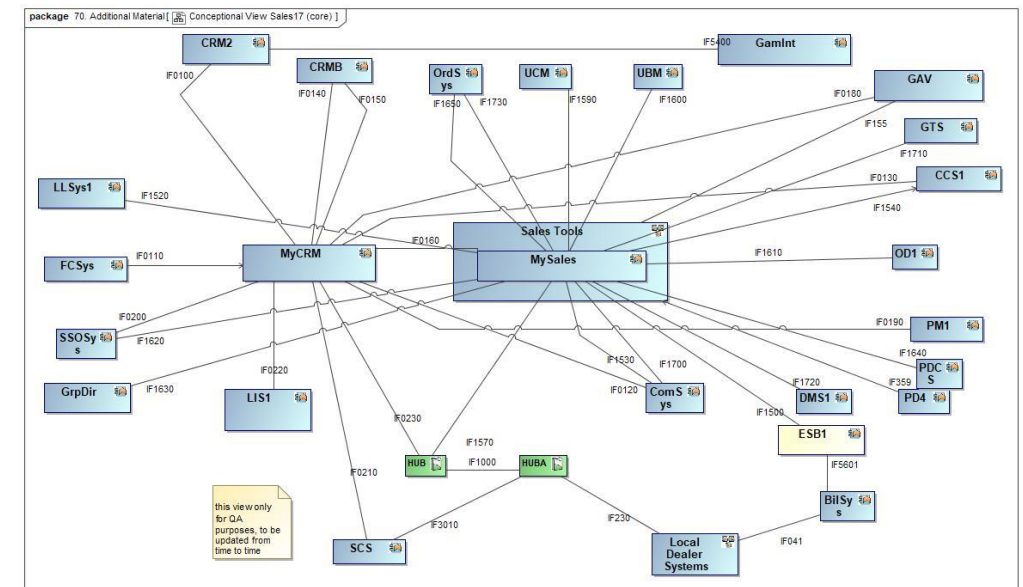
- How do we find errors early reducing costs?
  Fixing during impact analysis is cheapest.

- How do we improve effectivity for testing
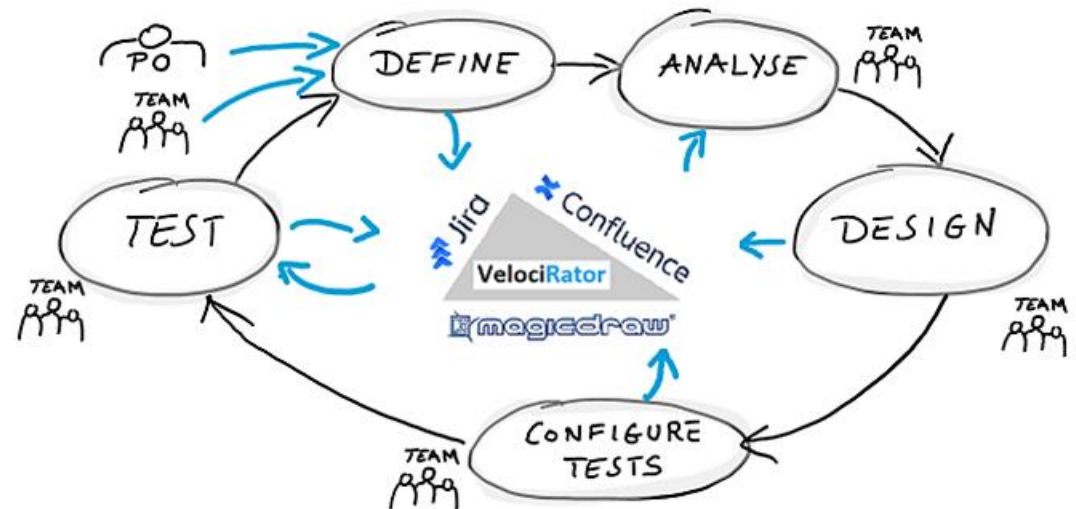 Align code, documentation & tests.

- Why do we need manual tests?
  Avoid disproportionate costs.

- System & System Integration Test in a complex application landscape (anonymized & simplified)

How are these problems typically solved?

- Mostly using a lot of time and a lot

  of budget

- We can do much better:

  Model-driven Documentation &

  Testing

- DEMO

  A Journey from Epic to Test

Model-Driven Test Generation with VelociRator
Abstract

Concept, code, and tests tend to drift apart in larger or longer running projects. A lot of time and money is wasted to keep them aligned and yet to a bad degree. With agile working models and higher frequency of deployment cycles this gets even worse.

Two main reasons are identified:

a. hands-on working style with insufficiently connected tools

b. missing refactoring capability for concepts and tests (compared to code where we have learned to love powerful IDEs)

In order to keep concept and code aligned I have presented model-driven system documentation in 2018.

Today I will present model-driven test generation extending that successful alignment even further.

After having motivated model-driven test generation, I will present a little journey that many of us work with, probably on a daily basis. I will start with an epic, manually created by some Product Owner in a well known tracking tool named Jira. Via interface this epic is pushed to a system model in MagicDraw. There, a business analyst describes the impact of the epic on already existing use cases. Then, VelociRator, the model-driven test generator, produces tests from modeled behavior. These tests are finally pushed back to Jira and linked to the initial epic closing the loop with a neat test coverage on the epic.
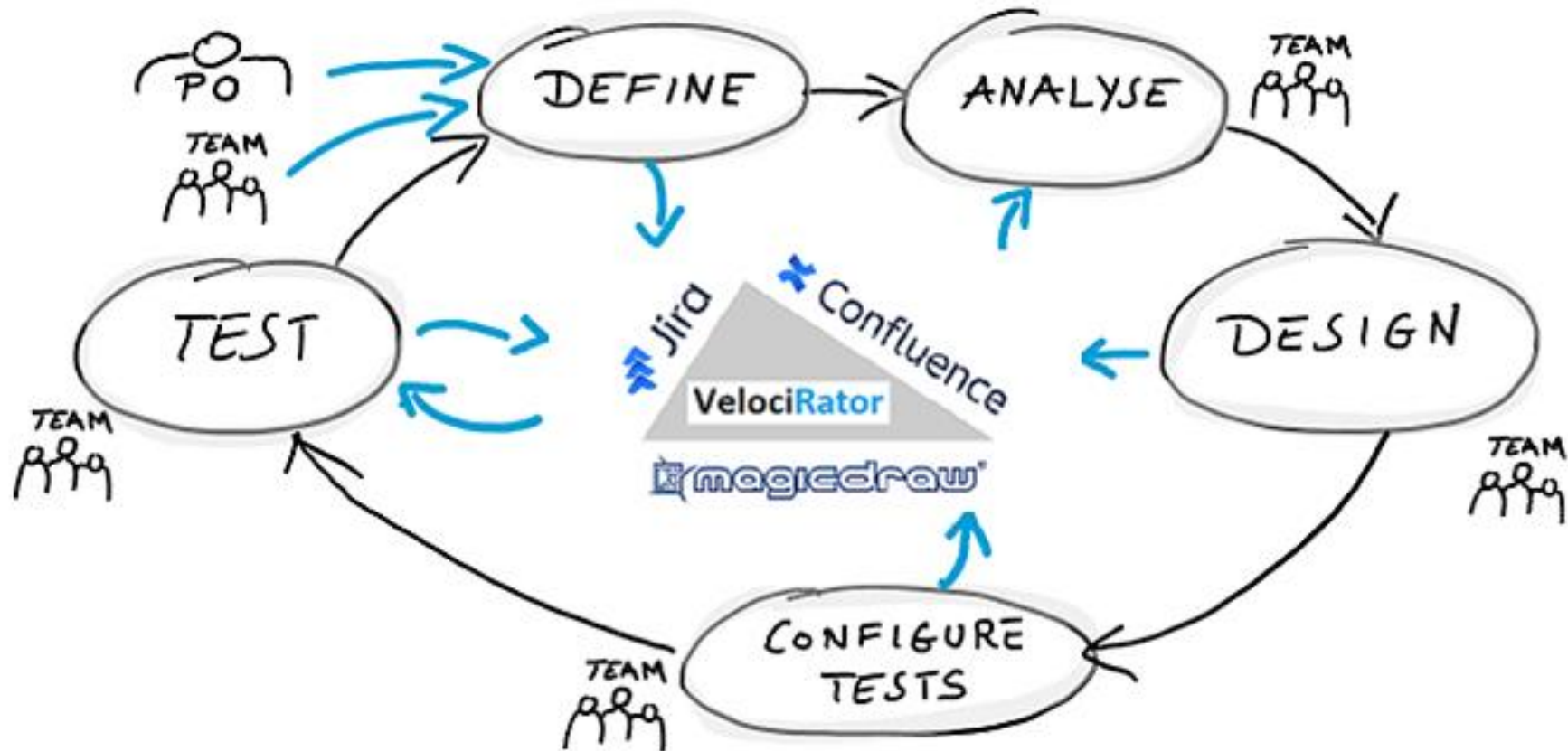
An outlook on model-driven test generation for automation will give a hint on how to combine test generation and test automation. Finally, I will conclude with why model-driven test generation saved our back during COVID-19.

VelociRator - Overview

- Quality & sustainability for product development

- Effective with reduced costs from requirement to product

- Unique combination of agile documentation and agile tests

- Successful PoC implemented for CRM system on Salesforce

RE & Test	Documentation
Model	
System under Design	

DEMO – A Journey from Epic to Test

Let's switch to our Modeling Tool

DEMO

Showcase Jira epic

blackened
CRM Issue Showcase

UC-01.01.02 [showcase] Create Account from

Showcase Jira test repository

UC-01.01.02 Create Account in CRM by search in

Model to Jira

Showcase analysis

Showcase test configurations
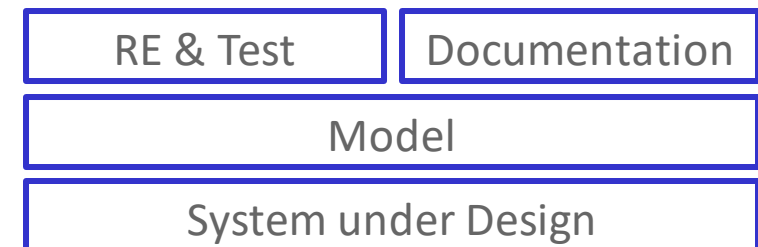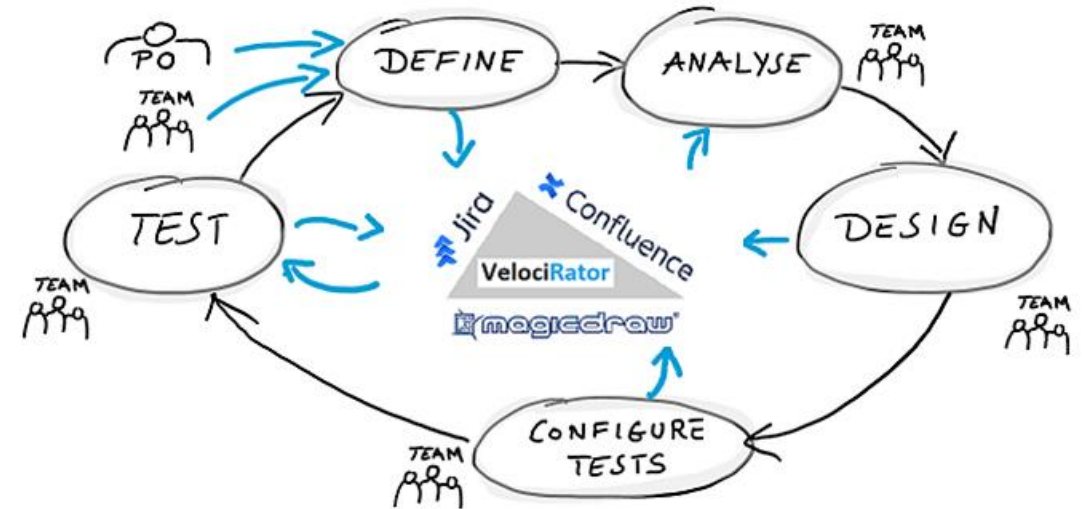
Starting the Journey.
from Epic via Impact Analysis to Test and Execution and back

blackened RMINT-146

Improve CDM and Lead Management

Details

Type: Epic

Test Coverage +

Create Test   **Create Sub-Test Execution**   **Link Tests**

No Tests were found testing the requirement.

https://atc.bmwgroup.net/jira/secure/XrayTestRepositoryAction!default.jspa?entityKey=RSPCRMINT

Impact Analysis.

Which of our Use cases are impacted?

Each Use Case represents a Function of RSPO ███

What are the Steps and what are the Dependencies?
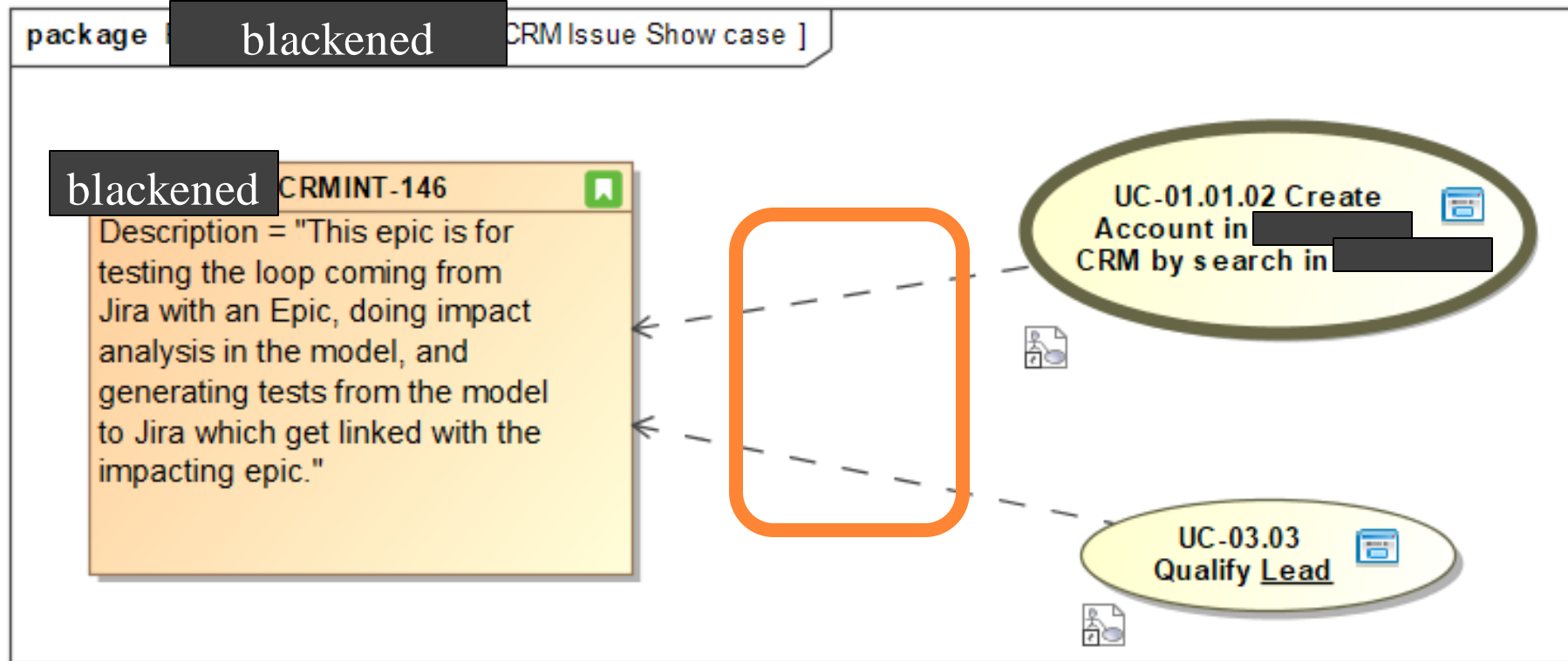
DEMO

… Resulting in Tests in Jira …

DEMO

CRMINT-227

UC-01.01.02 Create Account in ███████ CRM by search in ████████ ALT no fit - Person1 (WORLD)

Use Case Scenario:

: Request creation of new account
: Display of "Create New Customer" page
: Request search using e-mail or UCID
: Perform online search UC-IF0420.Op01 Read Customer Details by UCID or E-Mail ████████
: **Check whether UCID already exists**
: **Display of the customer creation with preset fields**
: **Check ██████ data**
: Complete customer data and request creation of new customer
: Create account using ████████████████
: Request creation of new account
: Display available main types/customer types for selection
: Display account form depending on customer type
: Enter account data

... Organized in a Test Repository.

you get Test Coverage for free …

... Execute Tests ...

… and check Coverage again.

DEMO

CRMINT-146

Improve CDM and Lead Management

⌄ **Test Coverage**   +

Create Test   **Create Sub-Test Execution**   **Link Tests**

Version ▾ | None - latest execution ▾ | All Environments ▾   **OK**

⌄ **READY** Unresolv███████ CRMINT... UC-01.01.02 Create Account in ██████ CRM by searc.. **PASS**

⌄ **READY** Unresolv███████ CRMINT... UC-03.03 Qualify Lead - MIN (WORLD) **PASS**

⌄ **READY** Unresolv███████ CRMINT... UC-01.01.02 Create Account in ███████ CRM by searc.. **PASS**

Tool Integration Platform for Model-Driven Anything
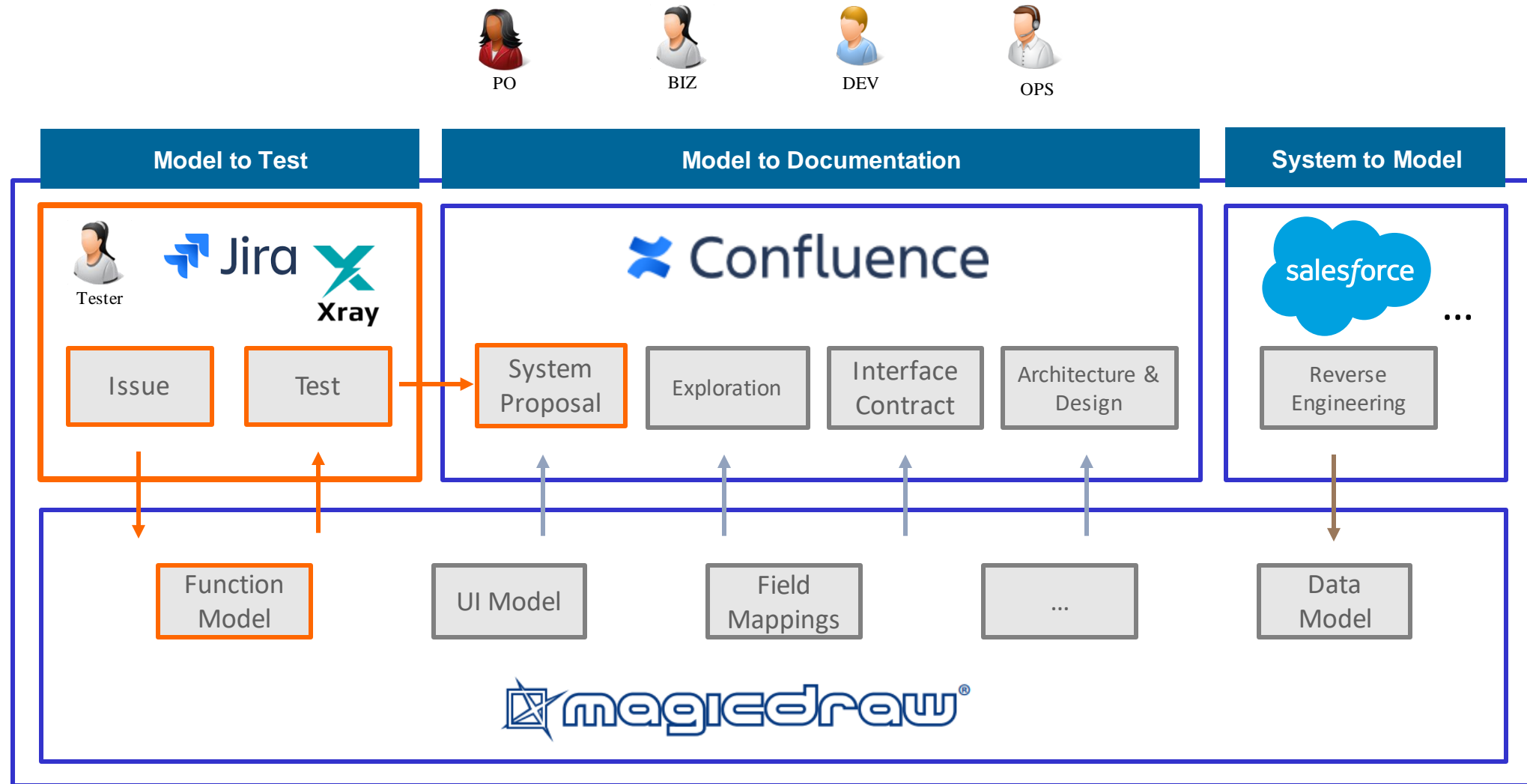
Platform Details – Options due to Tool Variations

http://www.ninkit.com/docs/VelociRatorAbstract.pdf
https://www.qs-tag.de/index.php?id=5307