Test Architects at Siemens

Peter Zimmerer
Siemens AG
Corporate Technology
Otto-Hahn-Ring 6
D-81739 Munich, Germany
peter.zimmerer@siemens.com

ABSTRACT

At Siemens we have invented and defined a new key role Test Architect to meet the diverse challenges of shorter time-to-market, increasing complexity and more agility while keeping quality and other key system properties high. In the real world our test systems increase in size, volume, flexibility, velocity, complexity and unpredictability: think about testing of autonomous systems or testing of AI systems (artificial intelligence). Additionally, digitalization (virtualization, cloud, mobile, big data, data analytics, internet of things, continuous delivery, DevOps) requires more than just a face lift in testing.

This talk shares our motivations, decisions, achievements, and experiences on our journey since 2016 to establish this new key role Test Architect on eye level with the software architects within the company.

KEYWORDS

Test architect; test architecture; test strategy; test system; software architect; software architecture; software engineering; education

1 TALK DESCRIPTION

What is a "Test Architect"? At Siemens we have invented this new key role by defining the responsibilities and tasks of a Test Architect and this talk is about our journey to establish this new key role within the company.

Imagine that you build a system with 10 million lines of code. To be successful this system should have a good architecture, and for that you need good software architects (see experience report [1]). Next, to perform good testing on 10 million lines of code, you also need to build an appropriate test system – not by spaghetti coding but with a well-designed, sustainable test architecture and by applying innovative software and test technologies.

But, who is responsible and in charge to make this happen? Typically, neither the test manager nor the quality manager will do this; therefore, we need to create a new role on eye level with the software architects: The Test Architect is born (see position paper [2]). To implement and establish this key role we have developed a unique expert training program for Test Architects at Siemens to meet the diverse challenges of shorter time-to-market, increasing complexity, and more agility while keeping quality and other key system properties high.

This talk introduces the new key role Test Architect, provides practical guidance on the needed strategies, tactics, and practices, and shares our experiences and lessons learned since the Test Architect program was launched in 2016 (see [3]):
- Why do we need a Test Architect?
- What is a Test Architect?
- What are the responsibilities and tasks of a Test Architect?
- How can a Test Architect provide value and create impact on the business?

Attend this presentation and learn what a Test Architect is all about and why we at Siemens are driving this forward. We are continuing our journey in this direction – at Siemens our target is to have nearly 50 certified Test Architects by the end of 2019. That means a tremendous upgrade and empowerment of testing!

2 KEY TAKEAWAYS
- Understand the rationale why we need a new key role Test Architect
- Get familiar with a thorough definition of a *real* Test Architect – it's not just another fancy title that is misused
- Get to know the responsibilities and tasks of a Test Architect – job profile, contents, focus points
- Apply discussed strategies, tactics, practices, and experiences and become a successful Test Architect – a new career path for testers!

REFERENCES

[1] Paulisch, F. and Zimmerer, P. 2010. A role-based qualification and certification program for software architects: An experience report from Siemens. In Proceedings of the International Conference on Software Engineering, 2010, DOI: 10.1145/1810295.1810300

[2] Paulisch, F. and Zimmerer, P. 2016. Collaboration of Software Architect and Test Architect Helps to Systematically Bridge Product Lifecycle Gap. In Proceedings of the 1st International Workshop on Bringing Architectural Design Thinking Into Developers' Daily Activities (Bridge), 2016, co-located workshop at International Conference on Software Engineering, 2016, DOI: 10.1145/2896935.2896936

[3] Zimmerer, P. 2016. Test Architect a key role defined. Professional Tester Magazine, issue 39, December 2016. http://www.professionaltester.com/