

CUSTOMER SUCCESS STORY

HOW DEVELOPAIR'S SOLUTION MAKES A DIFFERENCE WHEN TACKLING CHALLENGES RELATED TO LEGACY SOFTWARE

Industry: AUTOMOTIVE | Standard: ISO 26262

The Customer

Developair has closely collaborated for the past 3 years with an organization focused on the development of a wide range of systems and software for the automotive, aerospace, railway, and defense sectors. The type of software they develop covers basic integrity to highly critical applications and it is developed on Model Base Design (MBD) as well as no-MBD. Due to the nature of our clients' business, they were often dealing with "old" untraced requirements piling up, and "old" requirements being constantly modified and extended leading to extreme workload pressure on test engineers.

The Challenges

Stable Legacy Software

The client was often dealing with old legacy software requirements, which haven't been updated for several decades and haven't been properly tested and verified in accordance with the modern standards and regulations.

Due to this quality problem within the legacy software, the customer experienced failures during operations and therefore pay the price of addressing non-conformity related issues. Low quality legacy requirements can also lead to potential serious problems later on.

Variation of Legacy Software Requirements

The constant extensions and variations of existing requirements was resulting in increased workload to manually keep the testcases up to date. On average, 60% of the testcases needed to be manually updated each time. This was resulting in high delivery time pressure and inefficient cost management.

The Solution

One of the key features of Developair's platform is the generation of functional unit tests. This has been key to solve the delivery time and cost pressure put on the engineering team when legacy variants demanded upgraded test cases.

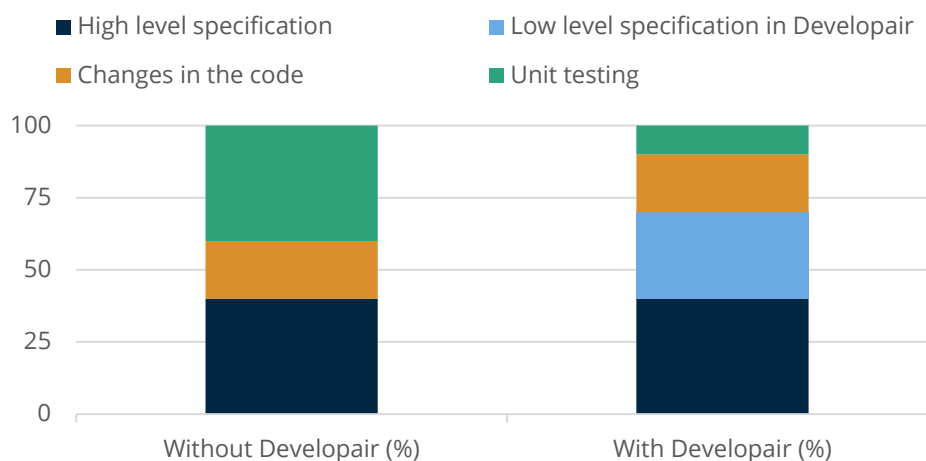
Through the Automatic Test Generator, the customer has been able to deliver updated, traced and relevant test cases in minutes. Thanks to the symbolic AI, the customer has automated the manual re-writing of the tests, reducing up to 70% the time spent in this activity.

Developair proposed to tackle the issues related to stable legacy software through comprehensive testing and documentation. Developair solution automatically generates relevant and systematic unit tests, and thorough documentation to ensure traceability and dependability.

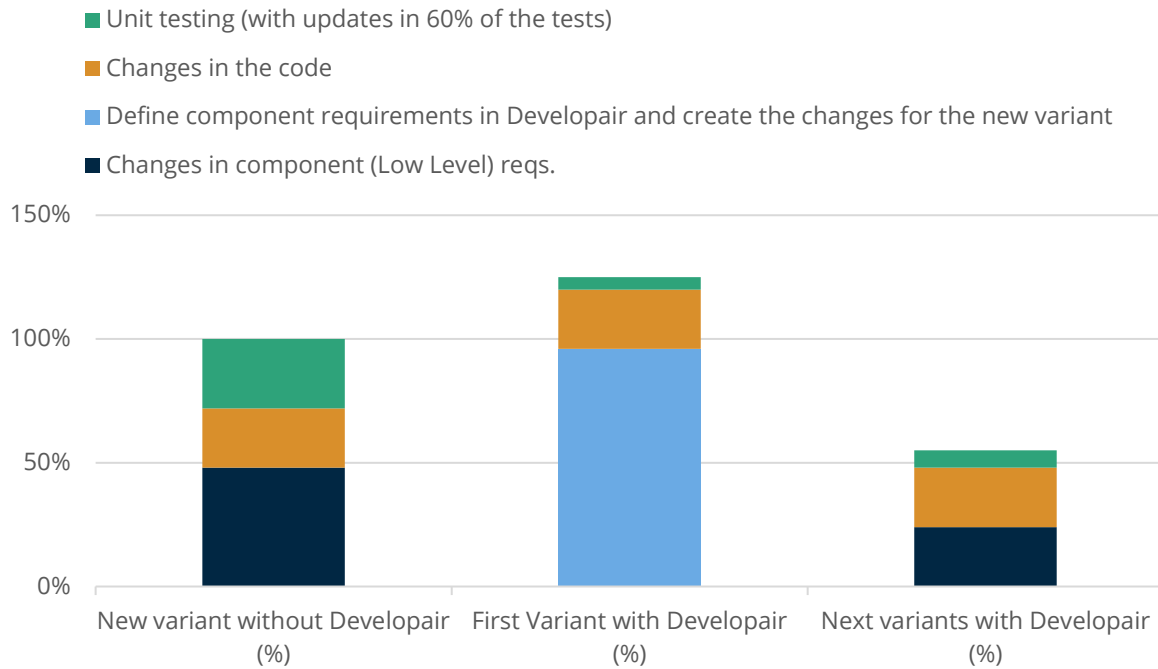
The Developair platform allows to automatically generate the necessary documents based on the information defined by the users.

The Outcomes

In the below image, we can see the distribution of development efforts with and without Developair. Thanks to the increased efficiency offered by the Requirements Editor and Automatic Test Generation, it is possible to define a complete low-level specification from which to generate functional unit tests without increasing the development effort.



To use the functionalities of the Developair's solution, it is necessary to define all the requirements from scratch. So, the effort required at this stage, was 26% higher than usual. However, when it came to variants, a 45% reduction of the development effort was observed since the user had only to define the changes in the new variant, please see the image below. Another benefit gained is the use of a centralized formal environment in which old legacy software requirements are now stored, verified and traced, ensuring their full testability and reliability.



In conclusion, by leveraging Developair's platform, the customer has successfully addressed the challenges of reusing legacy software. They have been able to improve: the efficiency of developing new software variants and the robustness of stable legacy software thanks to standardized requirements definition, enhanced testing and relevant documentation. This has not only reduced costs and improved quality, but also controlled technical debt, ensuring long-term maintainability and compliance with the stringent safety standards.