



CASE STUDY



Premier provider of Customer Experience Management (CEM) systems, Arantech, pilot Nomos Software toolkit to implement platform configuration audits

Business Challenge

- CEM platform must be highly configurable
- But it must also be configured correctly according to the best and most up-to-date expert counsel

Strategy

- Capture expert 'rules', and run automated checks on customer configurations

Nomos Pilot

- Capture requirements as 'rules'
- Auto generate checking software
- Auto generate reference documentation

Benefits

- Very effective mechanism to capture expert domain knowledge
- Easy implementation of complex checks
- Ultra-fast deployment of code that automatically detects problems in customer configurations

Arantech is a premier provider of Customer Experience Management (CEM) systems for leading communications service providers, and have a customer base that includes some of the largest and most advanced mobile operators worldwide. Their CEM solutions offer new perspectives on networks, with views that are centred on end-customer experience. These new perspectives allow operators to make intelligent judgements on how to deliver enhanced customer service, and on how to effect customer-centric change in the business. Arantech's expert understanding of network infrastructure and how it can be interrogated, and their ability to transform complex data sets into a relevant, understandable and informative view of customer experience, is what makes the Arantech solutions world-class.

Interrogating and interpreting data on the activity in the network is crucial to Arantech's success, and Arantech has built tremendous know-how in this regard into their solutions. But each network and each business is different: network infrastructure is different; customers are different; and factors that affect customer churn are different. There are further challenges. Successful businesses by their nature change over time, as new technologies are introduced, as new business models are adopted reflecting improved understanding of customers, and as the competitive landscape alters. Communications service providers need to bring their own expertise and their own business ethos to bear on the interpretation and the view of the data. Arantech's touchpoint product is versatile enough to accommodate customisations that take account of these factors.

The Challenge

All too often, software systems that are highly configurable and support deep and valuable functionality, are deployed with suboptimal configurations because the expert knowledge on how to configure the systems is not communicated effectively. Arantech's team of network engineers are experts in understanding and interpreting network activity, and experts in configuring the Arantech solution to report meaningful measures of customer experience.



Their world-class understanding and knowledge grows as they continue to implement deployments for the world's most advanced network operators. Arantech wants to harness this growing expertise on platform configuration and use it to efficiently deliver optimal configurations to all of their customers.

Arantech chose first to capture this knowledge as textual requirements, and quickly realised that an automated mechanism to audit customer configurations against these expert guidelines would be tremendously valuable.

A customer configuration is, in effect, an XML 'model' that defines how the Arantech solution interrogates and interprets customer experience for that operator. The expert guidelines, or requirements, on how best to configure the platform were in fact rules or validation checks on the XML model.

Nomos Solution

Arantech decided to pilot the Nomos Software validation toolkit to see if it provided an effective means to implement configuration audits.

Arantech identified their most challenging requirements, and worked with the Nomos team to capture these complex checks or 'rules' in the OMG's Object Constraint Language (OCL). This involved multiple iterations, reviewing and refining the requirements with domain experts, capturing tacit knowledge and removing all the ambiguities that are typical of English language requirements, until the requirements were absolutely correct. The rules were captured in the Nomos toolkit, and were reviewed online by the Arantech team. At any point, reference documentation, in the form of a word or pdf document, could be generated, giving a complete and accurate picture of the expert rules. Once the final set of rules was agreed, executable code was generated with a single button click, executable code that is very easily integrated. In fact, integration of the generated code into the Arantech environment took less than half a day and with this minimum of effort, they were able to run automated checks across all models in their repository.

The Results

Arantech was very pleased with the pilot, particularly since the Nomos team was able to easily implement very complex requirements. In fact, Arantech had discounted the idea of implementing over a third of these requirements with their existing tools because of the scale of the effort.

Working through the requirements was fast and fruitful, taking less than half a day of Arantech effort. Writing the rules in OCL very quickly uncovered ambiguities in the original requirements. Capers Jones of SPR¹ has found that 57% of software bugs originate in requirements, so techniques that help domain experts to very quickly and easily identify problems in the requirements are of tremendous benefit.

Most importantly, the code that was generated from the OCL requirements uncovered 12 problems in a single customer model, something which would have taken days to identify if the domain expert analysed the model manually.

Arantech is interested in using the Nomos toolkit beyond the pilot stage to implement more comprehensive audits of platform configurations.

¹ Software Productivity Research, www.spr.com