

Creating an Automated Test Platform for a Localization Service

Mobile Communications - Radio Position Testing - TETRA

About Astrid

ASTRID is a company establishing, exploiting, maintaining, and expanding the national radio communication network for emergency and security services in Belgium. ASTRID offers users a radio communication system, a paging system as well as systems for computer aided dispatch (CAD).

By establishing a reliable and transparent link between users, ASTRID aims to promote the smooth running of operations and the safety of users in the field and thus contribute to the safety and protection of the population as a whole.

Project Description

ASTRID has recently introduced the service "radio position" enabling users to track the positions of their radios via geo localization applications. The positions of the tracked radios are centralized in a localization server to which the applications are connected. Communication between server and applications happens via the Mobile Location Protocol (MLP).

We felt the need for an automated test platform that would allow us to verify on a regular basis that offered services are still guaranteed. Above this, we also wanted to have the possibility to validate the different geo localization applications before they would be connected to our localization server.

Requirements on a Test Tool

ASTRID was looking for a flexible test tool capable of behaving as server, client or as interface between client and server. These different test sets needed to be clearly distinguishable and easy to use. We also wanted to automate our tests as much as possible and to have automatic reports of the tests.

Reasons for Choosing Tools of Testing Technologies (now Spirent)

ASTRID knew that Testing Technologies (now Spirent) had already implemented automatic test cases for interoperability testing in TETRA networks. After seeing a demo of TTworkbench, we were taken with the tool for its unique features. We figured that the all-in-one editor, compiler, debugger and the executing interface would allow us to work more efficiently.

Another deciding reason was the fact that Testing Technologies (now Spirent) confirmed our request to integrate the MLP protocol causing us the convenience to work with only one testing platform. These benefits together with the advantage to use the ETSI standardized programming language TTCN-3, convinced ASTRID to choose the test automation platform TTworkbench.

Kinds of Systems Tested

Our team started by testing the localization server. The main purpose was to test the compliance with the MLP protocol. After that, we tested the compliance of the applications and the communication between the application and the localization server. Another set of tests we ran were the automated test cases for interoperability testing in TETRA. These test cases were provided by Testing Technologies (now Spirent).

Creation of Test Cases

ASTRID has developed all test cases for the localization service in-house. The framework was provided by Testing Technologies (now Spirent), but we created our own test cases and test campaigns. Even though learning the TTCN-3 programming language took some time, it was worth it, since we will use this knowledge for future projects.

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About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks.

We help bring clarity to increasingly complex technological and business challenges.

Spirent's customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled.

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Future Plans

Our test cases for the localization project will be adapted in the future either when there is a new version of MLP, when there are new options available in the localization server, or when we want to reproduce a specific behavior. Further on, we will use this platform as an example for future integrations of services on our network.

Testing Technologies' (now Spirent) Reaction Time, Support and Quality

ASTRID is very happy with the quality of Testing Technologies' (now Spirent) customer care. The helpdesk's reaction times and proposed solutions are fast and accurate. Testing Technologies' (now Spirent) support team helped us with problems on various levels: going from issues with the TTCN3 language to finding workarounds to get our test cases working. We feel well cared for.



ASTRID CLS

"We are sure that the combination of TWorkbench and TTCN-3 contributed to make this project such a success", says Els Heyvaert, Radio Networks Coverage and Performance Engineer at ASTRID. "A mature and powerful technology like TTCN-3 embedded in a sophisticated test automation tool like TWorkbench guarantees performance, durability and extensibility, affording ASTRID many opportunities in future projects."