CUSTOMER SUCCESS

Application: Software Testing

Industry: Security for Streaming Video

Customer Challenge: Security is Critical

NAGRA, a digital TV division of the Kudelski Group, provides security and multiscreen user experience solutions for the monetization of digital media. The company offers content providers and digital TV service providers worldwide with secure, open and integrated platforms and applications over broadcast, broadband and mobile platforms, enabling compelling and personalized viewing experiences. This NAGRA project is to build devices that protect streaming video and attach to a smart TV or set top box. NAGRA develops the end user product, the software and the SoCs.

Imperas Solution and Use Model

NAGRA uses an advanced Agile / Continuous Integration (CI) development methodology, employing the Imperas virtual platform, to develop embedded software. NAGRA started with a basic platform, then expanded it to include more and more peripherals on every Agile sprint. Virtual platform peripheral models were built by NAGRA (proprietary models) and Imperas (standard I/O, e.g. USB). For software debug and driver-peripheral model software-hardware co-debug, NAGRA used Imperas' high-performance simulation and debugger. VAP (verification, analysis, and profiling) tools used spanned OS-aware tools, code coverage, and memory analysis. The Imperas M*SDK environment and Open Virtual Platforms (OVP) Fast Processor Models delivered the high-level, high-performance simulations vital to their CI flow.

Benefits

Imperas virtual platform solutions helped NAGRA ensure security and extend their Agile CI process. An additional benefit was that improved communication between hardware and software teams in the Agile process resulted in hardware and driver quality improvements early in the project. Fast modeling, modeling tools and the extensive Imperas model library contributed to easy onboarding. Hardware/software simulations executed rapidly, with unprecedented access for analysis and debug.

Business Challenges

- Security
- Aggressive schedule for new products
- Comprehensive software testing

Design Challenges

- Embedded system software development, debug and test
- Application software development and test
- Continuous integration (CI) methodology

Results

- Delivered value in Agile / Continuous Integration (CI) methodology
- Reached quality metrics for secured products via high-performance software simulation, debug and software analysis tools

"At NAGRA, we have adopted the Imperas virtual platform-based software development and test tools for our application and firmware teams. The simulation performance, and the tools for software analysis, have added significant value to our daily Agile Continuous Integration (CI) methodology. Our view is that software simulation is mandatory to reach metrics required for high quality secured products."

NAGRA