

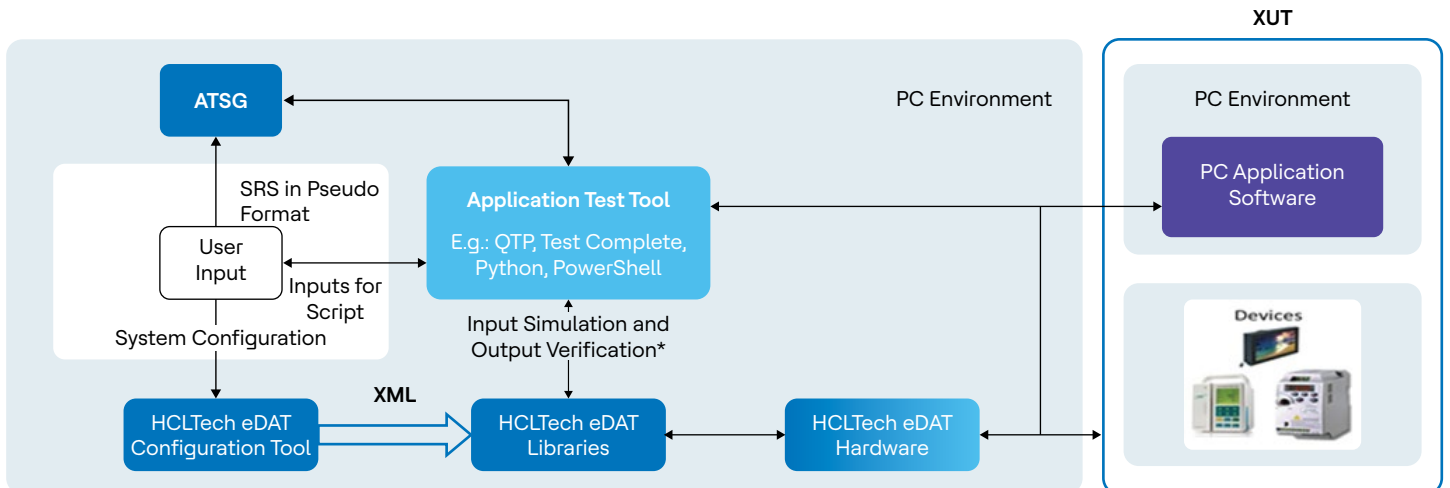
Electronic Device Automation Testing (eDAT)

HCLTech eDAT is a modular, scalable, extendable and highly customizable framework for automated testing of electronic devices. It enables test automation using the black-box approach through hardware and software interface accelerators.

Business challenges addressed

- 1** Inefficient manual simulation of analog and digital signals
- 2** Difficulty in supporting domain-specific protocol level simulation during manual testing
- 3** Inconsistent streaming quality and issues with playback resulting in end-user frustration and lower adoption rate
- 4** Inaccurate testing of many test cases related to user experience due to time to market constraint
- 5** High-risk of device failure and rework due to manual inspection in assembly line processes
- 6** Inefficiencies in monotonous manual testing for multiple languages, devices and versions
- 7** Huge maintenance effort on changing device resolution or UI element as a result of image reference-based testing

eDAT architecture



* Script execution in Test Application Tool decides when to communicate with DUT/Application/eDAT and also similar for responses

Key Features

- Automated test script generation (ATSG)
- Input simulation testing
- GUI testing
- Touch screen testing
- Interfaces supported—BT, USB, Wi-Fi, Ethernet, Controller Area Network (CAN)
- Audio and video testing
- Vision-based testing
- Imaging algorithms
- OCR—Optical character recognition
- Robotic arm-based non-intrusive testing
- Multi-platform testing
- Remote testing
- Programmable Power Supply (PPS), Digital Multimeter (DMM), Digital Oscilloscope (DSO), Relay

Why HCLTech eDAT?



Delivers high coverage (~50 - 60 percent) while faster time to market



Reduces testing costs, time-to-market and defect leakage



Fits enterprises' specific environment and test requirements leveraging customizations



Ensures optimal return on investment as one eDAT setup supports multiple devices under test (DUTs)



Offers objective testing evidence in reports



Pinpoints defects, thereby allowing faster troubleshooting

Sample eDAT setup screenshots



Proof Points



- All possible ways (20) to launch a game via a **leading gaming console system** were targeted for automation.
- Automated **three different categories**—game play, test case and launch scenarios.
- The team has moved from **0 to 100 percent test automation** for a set of games, freeing up resources to focus on the launch of different set of games.



- Testing of **online video app for leading ISV**.
- Leveraged **image comparison** to capture text from display images for testing.
- Reduced testing costs by **36 percent** and testing cycle times by **57 percent**.



- Automated testing of **shower control unit** for a **leading French aerospace company**.
- **Simulated shower control** inputs for testing.
- Reduced testing costs by **47 percent** and testing cycle time by **68 percent**.