



# iSYSTEM

## fitIDEA Automated Test Tool Suite



### *How an embedded software debugging and software test specialist performs product testing*

fitIDEA is an automated regression test tool suite used in an agile build/continuous integration development and test process/environment.

fitIDEA uses `isystem.connect` (generic Application Programming Interface) via Python scripting language to test all critical aspects of an embedded software debugger and test tool suite such as

- ❑ Standard debugging and IDE functions, e.g. download into FLASH memory, target memory access (read, write, real-time), breakpoint operations (execution and access)
- ❑ Advanced debugging with trace and profiling (especially time measurements)
- ❑ Software test with unit test and code coverage (statement, decision, MC/DC, function and call coverage)
- ❑ API functionality ...

### **Benefits:**

- ❑ Less time to generate verified builds
- ❑ Increase of HW/SW quality
- ❑ Everything is traceable and well documented
- ❑ Test process is transparent to 3rd parties

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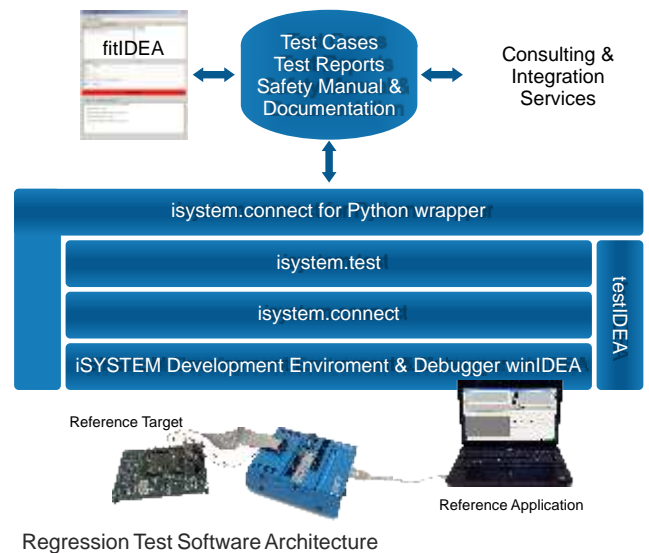
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## Concept of fitIDEA

fitIDEA testing is based on deterministic behavior of the test environment, which consists of the following items:

- ❑ Reference target  
(standard board, iSYSTEM board, customer board)
- ❑ Reference target test application  
(reference application)
- ❑ iSYSTEM debugger hardware (blue box)
- ❑ 3rd party debugger hardware  
(if supported by winIDEA)
- ❑ iSYSTEM software  
(winIDEA and testIDEA running on a PC)
- ❑ Compiler
- ❑ Sets of reference test cases for different use cases
- ❑ Custom test cases



Test stand for automated regression testing of iSYSTEM tools connected to reference as well as custom targets

So far the tool suite consists of about 60+ hardware configurations located in dedicated racks running 100+ test cases per configuration. Every developer has access to this test stand in order to run tests locally. Automated and nightly runs of fitIDEA enables iSYSTEM to live the proven way of continuous integration.