

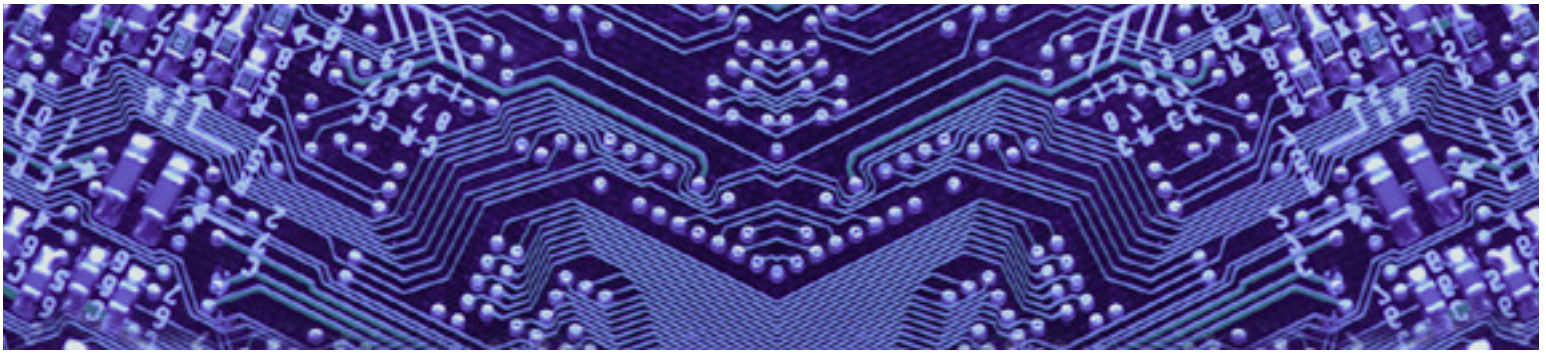
FOUNDATION for SIF Interoperability Test Kit Frequently Asked Questions

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PRODUCTION QUESTIONS

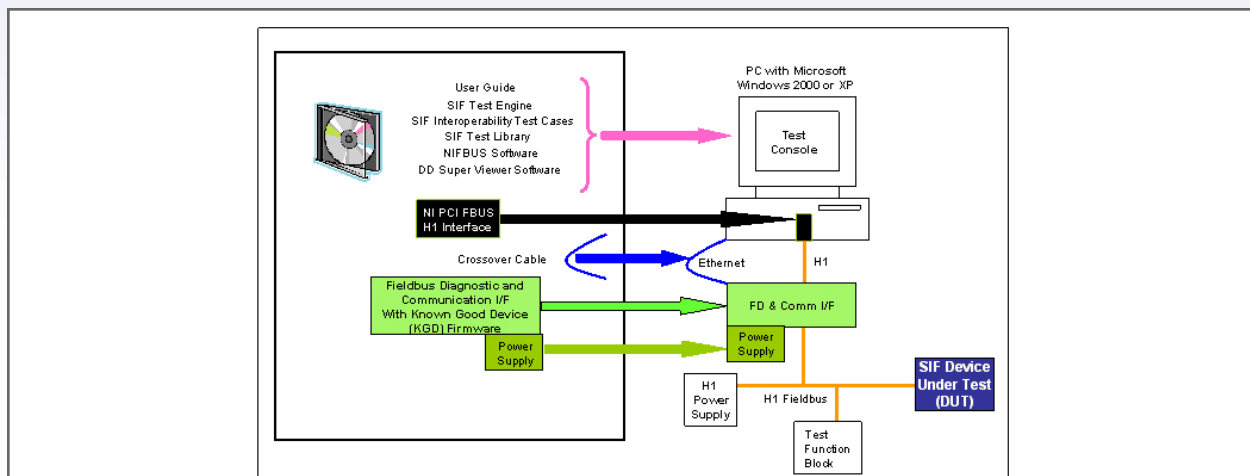
What is the SIF ITK?

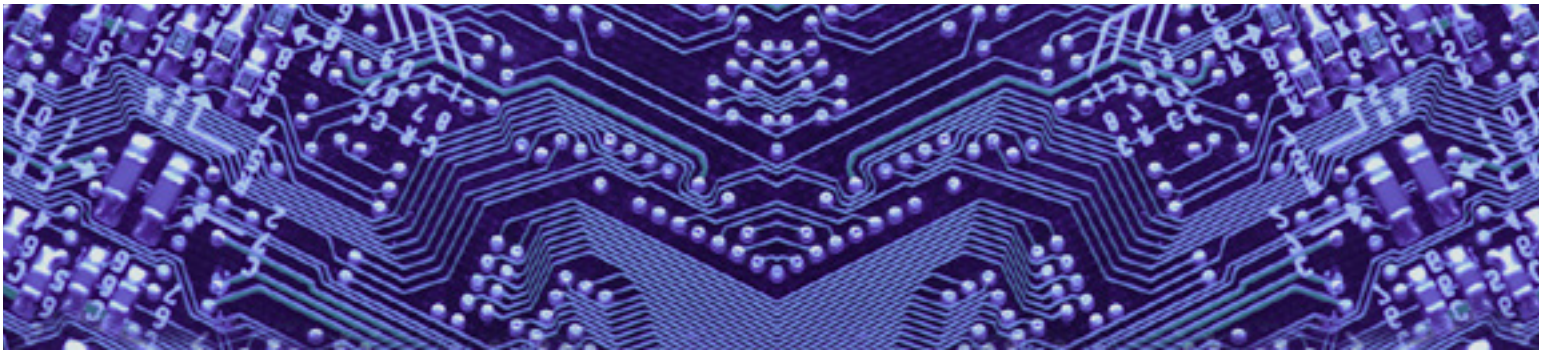
The FOUNDATION™ for SIF Interoperability Test Kit (SIF ITK) is the interoperability test kit for FOUNDATION for Safety Instrumented Functions (SIF) devices. The SIF ITK is a means to ensure interoperability between fieldbus equipment in modern safety systems.

One of the founding principles of the Fieldbus Foundation™ is the support of interoperability – the ability to operate multiple devices from multiple manufacturers, in the same system, without loss of functionality.

The SIF ITK tests the black box behavior of a FOUNDATION SIF device, using only its interfaces to the fieldbus. The SIF ITK relies on a direct connection through the National Instruments H1 Interface, and an indirect connection via the Ethernet port of the PC. It is assumed that the device under test uses a certified stack.

The scope of testing depends on the amount of interoperability and the level of FOUNDATION SIF conformity implemented by the manufacturer of a device. If the device under test (DUT) uses FOUNDATION SIF Function Blocks as specified by FOUNDATION SIF Specifications and is implemented according to FOUNDATION SIF profiles, the test system verifies if these blocks are implemented correctly. The SIF ITK is for internal testing only, so manufacturers should contact a certification agency for information regarding safety certifications.





What can I do with the SIF ITK?

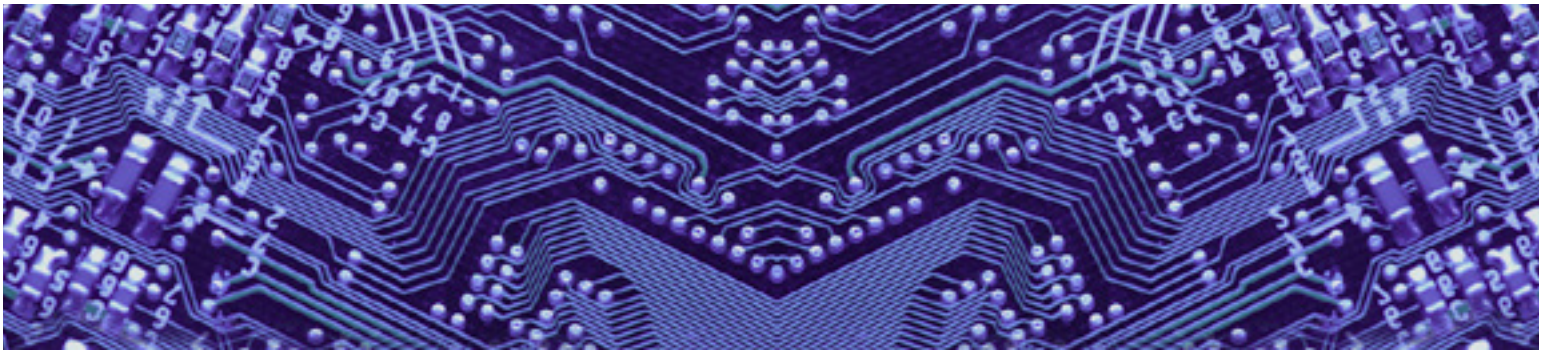
You can test your SIF devices at your own facility prior to submitting them to the Fieldbus Foundation for registration. This saves time and money. The FOUNDATION for SIF ITK is an excellent tool for troubleshooting and debugging devices, and provides all hardware and software required to ensure a manufacturer's complete device interoperability as specified by the Fieldbus Foundation's official registration testing procedure. The included software allows you to run tests identical to those used by the Fieldbus Foundation before sending your device for official registration.

The FOUNDATION for SIF ITK includes a host of test cases verifying the functionality of a fieldbus device and its conformance with the FOUNDATION fieldbus function block and transducer block specifications. It also incorporates a DD "Super Viewer" allowing examination and verification of a device's DD, and a conformance test procedure for the Physical Layer. The DD Super Viewer supports validation of existing DDs and the new DD 5.1 format. Device developers can walk their DD, execute methods, and render visualization elements supported by the new DD 5.1 technology. As additional standard function blocks become available, the ITK will be upgraded with new test cases to verify these expanded implementations.

What are the benefits of the SIF ITK?

- Assists in device development (test during development)
- Pre-testing a device to minimize testing costs
- Runs all or a portion of the test cases
- Enables developers to implement safety function capabilities
- Helps developers troubleshoot SIF devices during development
- Demonstrates interoperability of devices that are manufactured according to FOUNDATION specifications





Where can I learn more about FOUNDATION for SIF?

The Fieldbus Foundation website has a white paper on FOUNDATION Safety Instrumented Functions published by the ARC Advisory Group. This white paper is a tremendous resource for learning about FOUNDATION for SIF and can be found in the press releases section of foundation's website (www.fieldbus.org) or by looking under *Technical References* in the *End User Resources* tab. You can also click [HERE](#) for the direct link.

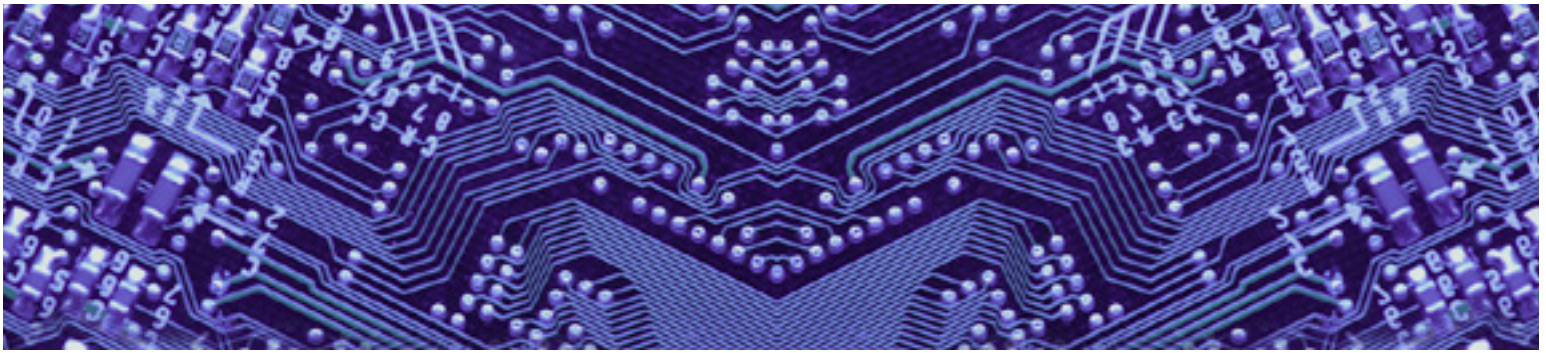
What is included in the SIF ITK?

- FOUNDATION for SIF Interoperability Test System Software
- Test Function Block (Black Box)
- Fieldbus Diagnostics and Communications Interface with SIF Known Good Device (KGD) Firmware Module
- National Instruments PCI-FBUS/2 board
- Cat5 Network Cable (crossover)
- 24v (750mA) power supply (Multi-plug)
- Product license agreement
- Software maintenance agreement

What are the system requirements?

- At least a 1GHz processor
- Microsoft Windows XP® Service Pack 2 or higher; Microsoft Windows Vista®; Microsoft Windows 7® (32-bit versions only)
- Net Framework 3.0
- 512 MB Memory (XP) or 1 GB Memory (Vista/7)
- (1) Available PCI slot for a National Instruments FBUS/2 PCI Card





What additional components do I need to use with the SIF ITK?

The following items will be needed:

- 2 fieldbus terminators
- 1 fieldbus power supply/conditioner
- 2 fieldbus 9-pin cables (pin 7 positive, pin 6 negative) FOUNDATION H1 cable

Developers will also find it necessary to acquire the updated DD Registered Library in order to speed implementation of FOUNDATION for SIF. The DD files will be available to download for all members with an active membership and a current license agreement to download the latest DD Library.

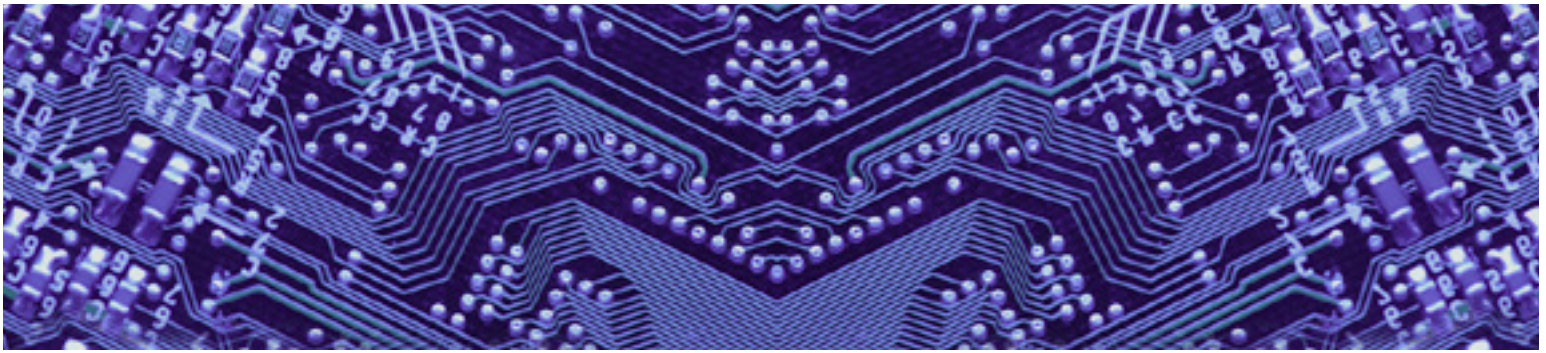
Are there optional components to the SIF ITK?

The interoperability test suite can be paired with an ITK Automation Toolkit designed to eliminate several manual intervention steps required when performing pre-registration testing of FOUNDATION fieldbus devices. The testing process requires dedicated user interaction, normally responding to hundreds of prompts throughout the run of the test. For example: powering devices off and on, enabling the simulation switch, and turning on write protection. The Automation Toolkit takes commands from the test case, and automates them, based on information in the device configuration file (INI file). The Automation Toolkit frees your development engineers to continue working in other areas of your product development schedule, ultimately helping to get your product to market sooner.

How can I purchase a licensed copy of the SIF ITK?

Purchasing the SIF ITK can be done by filling out an order form from the *Tools Page* under the *Development Resources* tab in the *FOUNDATION Technology* section of our website (www.fieldbus.org). A company purchase order will also be needed with the order form. These items can be emailed to sales@fieldbus.org or faxed to (512) 794-8893. You can reach sales at (512) 794-8890 ext. 21.





How do I receive updates to my SIF ITK?

Updates to the SIF ITK can be downloaded for free for 90 days from the date of purchase and thereafter can only be downloaded if the purchaser has bought the annual extended maintenance agreement.

What updates were added to previous SIF ITK versions?

Release 1.0 – System Management, SIF Resource Block, SIF Analog Input, Alarms and Events, Function Block Linking, Device Description, Capability File, and SIF Protocol Layer Conformance

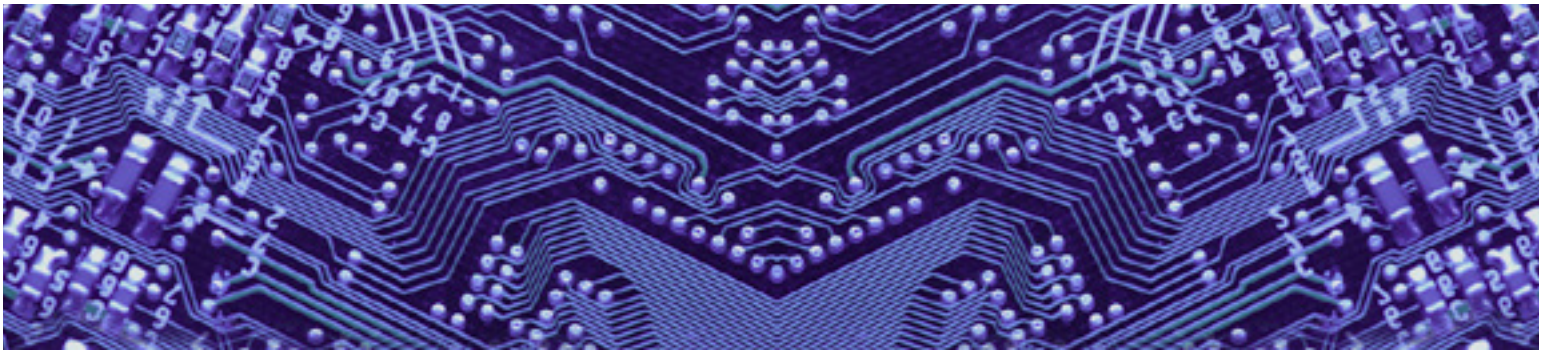
Release 1.1 – SIF Discrete Output Block, and a new more intuitive User Interface

Release 1.2 – New Test Cases to verify the functionality of fieldbus devices based on the current FOUNDATION for SIF technical specifications, including the newly introduced H1 dual-mode device capability employing powerful field diagnostics.

What test cases are included in the SIF ITK?

There are over 230 test cases in the SIF ITK including, but not limited to, Initial Connection and Address Assignment, Test of Alarm and Event Execution, Write Alarm, Verify Resource Restart Behavior, Verify Resource Write Lock Behavior, Verify Field Diagnostic Profile, Verify Access Permission Behavior, Verify Block Execution Time, Dual-mode Capability and SIS Protocol Tests. For a complete listing of the test cases, please visit the *FOUNDATION for SIF ITK Support Forum* found under the *Product Forums* on <http://forums.fieldbus.org>. Access is restricted to companies with active license agreements for the SIF ITK.





Where do I find information for the extended maintenance agreement?

Extended maintenance agreements can be found on Fieldbus Foundation's website under the *Tools Page* within the *Development Resources* heading under our *FOUNDATION Technology* tab. The procedure for purchasing extended maintenance agreements is the same as purchasing the tool itself.

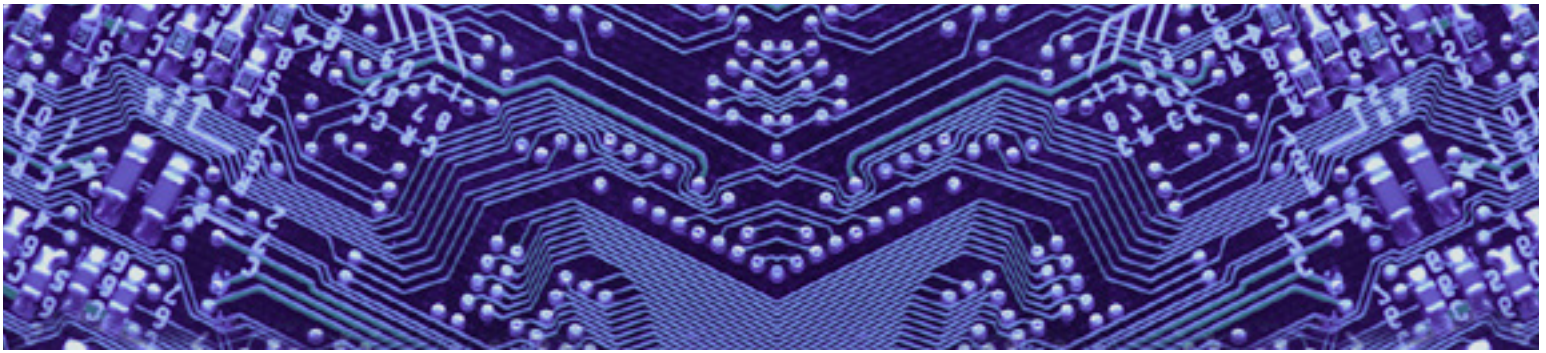
How do I get support?

You may email support@fieldbus.org.

Or call the Fieldbus Foundation at (512) 794-8890.

Questions may also be posted to the Fieldbus Forums at <http://forums.fieldbus.org/>.

If you do not have access to the *Fieldbus Forums* and wish to join, please be sure to follow the instructions online at the forums site to do so. If you need assistance please contact us.



REGISTRATION QUESTIONS

Which DD files will be posted to the Foundation's website?

Latest DD4 files (extension .ffo and .sym) and DD5 files (extension .ff5 and .sy5) and Capabilities File (.CFF) will be posted in a single zip archive.

Will I be able to register my devices using SIF ITK?

Yes, devices can be submitted today for testing and registration. Contact the Fieldbus Foundation for further details.

Can I self-register my SIF devices with this software?

No, registration for all devices must be done at the Fieldbus Foundation. Review the device registration kit, available on Fieldbus Forums, for more information. The SIF ITK kit will assure that your device pass the test cases prior to the official test campaign. Pre-testing of devices using the SIF ITK can significantly reduce lab testing cost. The kit will also reduce downtime and registration fees incurred during official registration.

What SIF ITK versions are available for registration?

<u>Version</u>	<u>Eligible for New Registration</u>
1.0	June 2011
1.1	December 2010
1.2	December 2012

