POLICY

FIELDCOMM GROUP™

Connecting the World of Process Automation

Product Registration Policy

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FieldComm Group
Attention: President and CEO
9430 Research Boulevard
Suite 1-120
Austin, TX 78759, USA
Voice: (512) 792-2300
FAX: (512) 792-2310

http://www.fieldcommgroup.org

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1 Scope

The purpose of this policy is to document the process and procedures a product manufacturer must complete to advertise their device as HART-Registered or FOUNDATION-registered.

2 Normative references

References	Document Number
PD10004	**FieldComm Group Style Guide**
PD10028	**FDI Package Registration**
PD10027	**FDI Host Registration**
PD20012	**HART Device Registration Procedure**
PD20014	**WirelessHART Device Registration Procedure**
PD20016	**HART EDD Host Registration Procedure**
PD20018	**HART EDD Registration Procedure**
PD30524	**FOUNDATION Fieldbus Device Registration Process**

3 Abbreviated terms and acronyms

The following defined acronyms are used throughout this process description:

Acronym	Meaning
CF	Capability File for a FOUNDATION Fieldbus device.
CFF	Common File Format (Specification) – FOUNDATION Specification FF-103 defines Capability Files and their structure.
.CFF	Filename extension for an H1 Capability File
.CFH	Filename extension for an HSE Capability File
CT	Conformance Test, sometimes referred to as CTK, or Conformance Test Kit - a test system that verifies that a communication stack in a FOUNDATION Fieldbus Device conforms to specifications. Pre-requisite to interoperability testing.

DD / EDD	Device Descriptions / Electronic Device Descriptions – used interchangeably, and generally mean the same thing. For FOUNDATION Fieldbus technology, EDD can also specifically refer to a DD that is conformant to FDI specifications, so it is commonly called an "FDI EDD" to differentiate it from the older DD4 and DD5 technology for FOUNDATION Fieldbus.
DD4	Refers to the original EDD technology for FOUNDATION Fieldbus. Mandatory for all devices registered to ITK Profiles 4, 5, and 6.
DD5	Refers to an enhanced EDD technology for FOUNDATION Fieldbus that overcomes the early size constraints of DD4 technology. This allowed significant enhancements to the EDD. Optional for devices registered to ITK Profile 5. Mandatory for devices registered for ITK Profiles 6 and 7.
DPCTT	(FDI) Device Package Conformance Test Tool – The software tool that tests the conformance of the structure and signatures of an FDI Package. Required as a test for an FDI package after the contents of the FDI package have been tested with the Device Support File Test tools and processes from the respective technology organizations. (HART, FF, Profibus)
DSFT	Device Support File Test – refers to the process of testing and validating EDD files. A pre-requisite to registration of a device. Also a pre-requisite to registration of an FDI package. With respect to FOUNDATION Fieldbus technology, DSFT is performed by specific test cases during interoperability test as well as some manual inspections by the test administrator.
DUT	Device Under Test is the registration candidate product submitted for conformance assessment.
FBAP	Function Block Application Process – User Layer portion of a FOUNDATION Fieldbus field device.
FDI	Field Device Integration Refers loosely to the entire technology that is FDI, including the latest EDD specifications that are compliant to FDI technology, and all software tools and specs related to FDI technology.
FDI Package	Refers to the complete group of required and optional items that can be combined to form a collection of device support files, documentation, and plug-ins that is compliant to FDI specifications. This includes optional and mandatory items from FOUNDATION Fieldbus, including DD4, DD5, and FDI EDD files, but also EDD files from HART and/or Profibus technology, as well as UIP plug-ins and device documentation.
.FDIX	Filename extension for an FDI Package
.FF4	Binary filename extension for a DD4 (FOUNDATION Fieldbus DD Services 4.x)
.FF5	Binary filename extension for a DD5 (FOUNDATION Fieldbus DD Services 5.x)
.FF6	Binary filename extension for FDI EDD
H1	31.25kbps FOUNDATION Fieldbus
H1 CT	H1 Conformance Test (Communication Stack Test)
H1 CTK	H1 Conformance Test Kit (product AT-410)
H1 ITK	H1 Interoperability Test Kit (product AT-420)

HSE	High Speed Ethernet - FOUNDATION Fieldbus over TCP/IP
HSE BFT	HSE Bridge Function Test (part of product AT-421)
HSE CT	HSE Conformance Test
HSE CTK	HSE Conformance Test Kit (product AT-421)
HSE ITK	HSE Interoperability Test Kit (product AT-422)
IT	Interoperability Test
ITK	Interoperability Test Kit (Interoperability Test System)
LD	H1 / HSE Linking Device
PHY	Physical Layer – In this document, refers to any FOUNDATION Fieldbus H1 network interfaces on a field device, linking device, or host.
PHY Test	Conformance Test for an H1 Physical Layer (FF-830)
SIF	Safety Instrumented Functions
SIF H1 ITK	SIF H1 Interoperability Test Kit (AT-480)
.SYM	Symbol filename extension for a DD4
.SY5	Symbol filename extension for a DD5
UIP	User Interface Plug-in - A plug-in that is part of an FDI Package, similar in some ways to a DTM.

4 Product Registration Policy

The FOUNDATION Device Registration Mark and/or HART-Registered Mark on a product is the manufacturer's representation that a sample of the product has successfully completed all test procedures specified in the FieldComm Group's Device Registration Process.

The FOUNDATION Fieldbus Device Registration Process defines a series of test procedures for a particular product profile.

The HART Device Registration Procedure defines a series of test procedures for a particular product profile.
The test procedures may include one or more test campaigns that are performed by the manufacturer, an approved third party testing facility, or FieldComm Group's laboratories in Austin, Texas.

FieldComm Group audits each product as it completes the process and permits those that conform to the Device Registration Policy to carry the FOUNDATION Device Registration Mark or HART Registered Mark as appropriate. Placing either mark on a product that has not completed the Device Registration Process is a trademark violation. The test procedures describe a set of testable features that may be implemented in test specifications, test automation, or manual testing. Those features trace back to test requirements developed by working groups and approved by FieldComm Group to validate that a device conforms to all specification requirements for the features supported by the device. A device must pass all required test cases related to the features that are tested. Features that are tested are therefore considered to be registered, and those registered features are identified on the Device Registration Certificate and are also listed in an online catalog on the FieldComm Group website.

5 Program Benefits

FieldComm Group shall grant the following benefits when the device under test successfully completes the Device Registration Process.

5.1 Test Report

FieldComm Group shall issue a test report documenting the findings of the test administrator.

5.2 Product Registration Symbol – FOUNDATION Fieldbus

FieldComm Group shall grant the device manufacturer the right to use the FOUNDATION Fieldbus Product Registration Symbol subject to the marketing standards in accordance with the FieldComm Group Style Guide (FCG_PD10004).

Figure 1. FOUNDATION Fieldbus Product Registration Symbol

5.3 Product Registration Symbol – HART

FieldComm Group shall grant the device manufacturer the right to use the HART-Registered mark subject to the marketing standards in accordance with the FieldComm Group Style Guide (FCG_PD10004).

Figure 2. HART Registered Mark.

5.4 Registration Certificate

FieldComm Group shall issue the manufacturer a registration certificate documenting the device under test, additional tested features, and the device support files. Registration certificates are valid only for the products and/or files documented in the registration certificate.

5.5 Web-based Product Registry

All FOUNDATION-Registered and HART-Registered devices that meet the current registration requirements shall be listed in an online Product Registry via the FieldComm Group website http://www.fieldcommgroup.org . FieldComm Group reserves the rights to change the requirements for listing in the product registry.

6 Test Campaigns

A registered device must show proof of conformance to one or more of the following test campaigns described in this section. The required test campaigns are specified for each device profile in section 7.

Test cases are organized into a test schedule, and one or more test schedule(s) are executed during a Test Campaign. Each test case can have a verdict of PASS, FAIL, INCONCLUSIVE or NOT APPLICABLE. INCONCLUSIVE results are analyzed by the test administrator and given a final verdict of PASS, FAIL or NOT APPLICABLE.

Test cases that result in FAIL verdict must have a valid Change Request (Anomaly tracking, Action Request) with an approved resolution to proceed with the process.

A device successfully completes a Test Campaign when **all test cases in all test schedules and test specifications** result in a verdict of PASS or NOT APPLICABLE.

6.1 Preconditions

The following preconditions apply to all profiles, submissions, and must be fulfilled before any Test Campaign.

6.1.1 Physical Layer - Hardware

The device supplier must verify the electrical characteristics of the product by completing the appropriate Physical Layer Test with a verdict of PASS. The device supplier submits evidence of this test to the FieldComm Group. These test results will be verified during the conformance test process.

Each device submitted for a Test Campaign must have a unique physical layer test report with all supporting documentation.

Products which can operate with more than one physical layer profile/type are required to completely test the physical layer of the product in each supported mode. This includes devices which may only change their physical layer type via the manufacturer (for example, at the factory). Examples include: AC powered and DC powered modes, 2-wire and 3-wire configurations, different quiescent current draw levels, FISCO model and IS Entity model hardware.

6.1.2 Test System Files

The list of files required for a Test Campaign submission are unique to each technology (protocol) tested. The protocol specific documentation will provide more detailed requirements. The manufacturer must supply all defined test system files and logs produced by the test systems as required per protocol specific requirements. The technology/protocol specific logs and supporting files are required for any Test Campaign of that particular protocol.

Additional test time and fees will apply if the required test system files and supporting files provided by the manufacturer are not consistent with the device under test. Examples of Test System Files may include but not limited to *.ini files for H1 ITK, *.qa.log files for HART devices, .OUT files for any HART product, TML logs for WirelessHART products, SDC logs for EDDs. Examples of supporting files may include but not limited to *.FF5, *.FM8, *.fdix, CF, and LIT18 documents.

6.1.3 Device Descriptions / Electronic Device Descriptions

In order to complete a Test Campaign, the manufacturer must supply one or more sets of DD/EDD files for the device under test. The required and optional DD/EDD files for device registration are specified in the protocol specific documents.

The manufacturer must use an approved Tokenizer and EDD library to generate the required DD and/or EDD files for a Test Campaign. The FieldComm Group publishes a known set of Tokenizer and EDD library versions that are acceptable for registration. Contact the FieldComm Group for further details concerning the approved tool versions via the support portal at https://support.fieldcommgroup.org

The DUT will not be granted registration until all submitted DD and/or EDD files have passed the required testcases, processes, and completed a successful conformance assessment based on the type of files submitted. Some of these test case requirements may also be manual inspections performed by the test administrator at FieldComm Group. The requirements for a Test Campaign submission are unique to each technology (protocol) tested. The protocol specific documentation will provide more detailed requirements.

6.1.4 FDI Device Packages containing Device Descriptions / Electronic Device Descriptions

FDI Device Packages must pass the Device Package Conformance Test Tool (DPCTT), which verifies the structure and contents of an FDI Package. All EDD/CF files included in FDI Device Packages must also pass the EDD/CF test requirements.

DD and EDD files submitted for test must be pre-tested (as evidenced by the test system log files and other requirements) and verified by the device manufacturer before being submitted with the device for testing. The test administrator at FieldComm Group will notify the device manufacturer of any DD or EDD tests that fail during a Test Campaign, and the specific problems that were found.

Under all circumstances, additional test time (and testing fees) will apply when any updated device support files are required to pass any test.

6.2 Test Scheduling and Use of Lab Resources

Since lab resources are limited, test time at FieldComm Group is scheduled to accommodate the needs of all customers in the most efficient manner possible. Test time can be requested by filling out and submitting forms available on our support portal at https://support.fieldcommgroup.org The test administrator will schedule test time as close as possible to the dates requested by the customer, but to be fair to all members and customers of the FieldComm Group, test time is granted on a first-come, first-served basis.

It is the expectation of FieldComm Group that all devices submitted for a Test Campaign have been thoroughly tested by their manufacturer and that no significant problems will be found.

6.2.1 FOUNDATION Fieldbus

One calendar week is reserved for each FOUNDATION Fieldbus device that is submitted for test. Under all circumstances, this should be sufficient time for FieldComm Group to perform a complete test of the device, including all device support files; to verify the H1 Physical Layer of the device; complete execution of the H1 ITK; work with the manufacturer to resolve any minor configuration issues that are found, and still do the necessary administrative work to provide the benefits to our customers.

6.2.2 HART

Four calendar weeks are reserved for each HART device that is submitted for test. Under all circumstances, this should be sufficient time for us to perform a complete test of the device, including all device support files; to verify the FSK Physical Layer, Token-Passing Data Link Layer, Universal Application Layer, and Common Practice Application Layer of the device; work with the manufacturer to resolve any minor configuration issues that are found, and still do the necessary administrative work to provide the benefits to our customer as described in section 5.

6.2.3 WirelessHART

Eight calendar weeks are reserved for each WirelessHART device that is submitted for test. Under all circumstances, this should be sufficient time for us to perform a complete test of the device, including all device support files; to verify the FSK Physical Layer, Token-Passing Data Link Layer, Universal Application Layer, Common Practice Application Layer, TDMA Mesh-Layer, System Level Test, and Burst Mode operation of the device; work with the manufacturer to resolve any minor issues that are found, and still do the necessary administrative work to provide the benefits to our customer as described in section 5.

FAIL results for any test case in any required Test Campaign must be resolved by the device manufacturer or their development partners prior to the shipment of the device sample for official test and registration. For any issues that are found during an official Test Campaign, it is critical that the submitter of the product checks the support portal (and may need to be available via email and/or phone) to resolve open items quickly during the reserved test period.

6.2.3.1 Resuming Suspended Test Campaigns

Devices with FAIL results will be removed from the active test bench if the issues are not resolved during the test time originally reserved for the device. The test campaign will be suspended until the manufacturer requests a new test date for the device. A suspended Test Campaign will not take priority over the scheduled tests of other customers. The Test Campaign will be rescheduled by the test administrator at the next available opportunity once the manufacturer has resolved the open issues, provided any required documentation updates, additional payment information, and a new device sample, if necessary.

Flashing of device firmware during any Test Campaign, for any reason, means the device under test has been modified. Under all circumstances this will require the Test Campaign to restart from the beginning, because previous test case results no longer apply to the modified device sample.

Additional test time will apply.

7 Registration Requirements

The device manufacturer must fulfill the following requirements to meet the Device Registration Policy. In addition, manufacturer products must complete the requirements of the Test Campaign for the target protocol.

7.1 Intellectual Property License

The manufacturer must license the necessary intellectual property of the FieldComm Group.

7.2 Manufacturer ID

The manufacturer must obtain a unique manufacturer ID number that represents their company in the devices they manufacture. The Manufacturer ID is issued by the FieldComm Group and can be requested as a benefit of membership.

For FOUNDATION Fieldbus products, this is returned in the resource block of the device as the value of the read-only parameter (MANUFAC_ID). For HART products, this is returned in the Command 0 response.

7.3 HART Device Type

The manufacturer must obtain a unique Device Type number that represents a HART product. The Device Type is issued by the FieldComm Group and can be requested as a benefit of membership.
For HART products, this is returned in the Command 0 response.

8 Test Campaign Procedures (General; FieldComm Group Lab)

The following procedures define general procedures the FieldComm Group shall execute to assess whether a product met all program requirements. A Device Registration must also meet the protocol specific requirements in addition to these general terms.

8.1 Preparing for Testing

In order to minimize the expenses related to a test campaign, all clarification requests for the specifications and/or test cases must be submitted to the FieldComm Group no later than **60 days prior** to the scheduling of a test campaign. While some issues may be resolved quickly, others may require confirmation from FieldComm Group maintenance teams. This process can take several weeks.

The FieldComm Group tracks these requests through various change tracking systems. While we make every effort to harmonize these systems, the communication protocols have existing tools as follows:

For FOUNDATION Fieldbus products, use the Action Request tracking system at http://www.fieldbus.org/ar.
For HART products, use the HART Change Request Tracker at http://www.hcftracker.net

If you are submitting an action request/change request that pertains to a device in an upcoming test campaign, you **must also contact the test administrator at FieldComm Group** so that such requests can be escalated through the resolution process. Simply filing an action request or change request does not guarantee that any action will be taken prior to a test campaign.

Failure to contact the test administrator at FieldComm Group or failing to file a request at least 60 days before scheduled test start date will result in delays during testing, and may also result in the test campaign being rescheduled at the discretion of the test administrator.

8.2 Payment

The manufacturer must provide a promise of payment for the estimated testing and registration certificate fees in the form of a credit card or purchase order when test time is requested. Invoices will be sent to a manufacturer requesting payment from the credit card or purchase order only AFTER services have been rendered and a test campaign is closed.

If a manufacturer wishes to pay for such fees by wire-transfer, such payments should not be sent until the campaign is closed and an invoice has been sent to the manufacturer. Pre-payment of any fees by wire-transfer will not result in a guarantee of registration, nor will it result in an expedited test campaign.

Any purchase orders with expirations before the start of a test campaign must be updated prior to the start of testing.

8.3 Request for Testing

The manufacturer shall complete the request for testing through the FieldComm Group support portal.

8.4 Test Campaign Execution

At the completion of a test campaign, a test report is generated indicating the pass/fail status for all test cases in the test schedule. To successfully complete a test campaign, the device must fully execute all test cases with a verdict of PASS or NOT RUN.

All test reports must be signed by the manufacturer and a copy of the signature page must be returned to the FieldComm Group no later than 30 days from receipt of the printed reports. Test report signature pages that are not returned within 30 days will result in the temporary de-publication of the device from our Product Registry. Test campaigns are required to be completed within the scheduled test period which begins with the first day of testing. Any campaign open beyond the estimated completion time but waiting on further updates to a device or a device's support files will be closed at the discretion of the test administrator at FieldComm Group.

Test campaigns that are closed by the test administrator will result in a return of the hardware at manufacturer's expense, and a bill for all test time used during the test campaign. The manufacturer must begin a new Test Campaign if they wish to register the device.

8.5 Registration Audit

The FieldComm Group will verify the device under test has completed the registration requirements specified in section 7. Devices meeting all requirements will receive the benefits described in section 5.

9 Test Campaign Procedures (Fraunhofer IOSB Lab)

Contact The Fraunhofer Institute for Systems and Innovation Research ISI (Karlsruhe, Germany) for information on stack conformance campaign test procedures.

10 Test Campaign Procedures (ITEI Lab)

Schedule all Test Campaigns with Instrumentation Technology & Economy Institute (ITEI) via the FieldComm Group support portal. Test Campaign schedules at ITEI are coordinated through the FieldComm Group.

11 Registration Certificate Compliance

FieldComm Group issues Product Registration Certificates to products that meet all requirements of the product registration process (specific requirements for each technology/protocol/product type). The Product Registration Certificate is valid for the product identified on the certificate. A product manufacturer that makes modifications to the product must maintain the certificate to continue to use the Product Registration Symbol and advertise the product as FOUNDATION-Registered or HART-Registered.

All changes must be isolated from the protocol interface. Each communication protocol outlines the specific rules for revisions.

The following examples would not evaluate the product as modified.

1. Cosmetic changes (color, housing, etc.)
2. Modifications to the sensor/actuation technology.

All changes which qualify as product modifications must be reported to FieldComm Group as a signed letter on official product manufacturer company letterhead. Modifications should be described as clearly as necessary for the test administrator to determine how to proceed and to provide a quote for registration maintenance services, if necessary. If there are any questions or unusual cases, please contact FieldComm Group for further details.

11.1 Modifications to the Device Support Files

A manufacturer that modifies the Capability File, Electronic Device Descriptions, or FDI Device Package of a registered product must complete a Device Support File Test on the support files that were modified.
The Electronic Device Description and Capability File Revision policy for FOUNDATION Fieldbus products is defined in FF-901 Device Description Interoperability Specification. The HART Electronic Device Description file revision policy is defined in HART EDD Registration Policy (FCG document PD20018). The FDI Device Package file revision policy is defined in FDI-2024 Part 4: FDI Package.

Device Support File modifications include:

1. Changes to the calculated CRC32 for any device support file (e.g. *.FFO, *.SYM, *.FF5, *.SY5, *.FF6, *.CFF, *.CFH, *.FM6, *.FM8, *.FMA)
2. Changes to the security signature of any FDI Package (e.g. *.fdix)

12 Test System Requirements for Device Registration

Manufacturers are encouraged to test and register against the latest version of the test systems. A manufacturer may select the prior version of the test system to test and register for up to six (6) months after the release of a minor version of the test systems and/or FDI Package IDE and up to twelve (12) months after the release of a major version of the test systems and/or FDI Package IDE. Private label and rebranded devices are excluded from this requirement. (See section 14 for details concerning private label and rebranding device registration.)

Both minor and major version releases may include additional test cases. A manufacturer should choose a test system that validates the complete functionality of the device submitted for test and registration.
The version of the test system to be used during a Test Campaign is confirmed during test time reservation.

13 Device Family

A single manufacturer may register multiple copies of a device under the same test campaign. This group of devices is known as a Device Family. Each registered device in a device family receives the benefits defined in section 5.

To qualify as a device family, all devices must be identical except for the following:

1. Mechanical configuration of the device
2. Transducer Block initial values (FOUNDATION Fieldbus)
3. Device Variables (HART)
4. Commands (HART)
5. Model name used to reference the product (other than the FMS Identify Response or VFD name for FOUNDATION Fieldbus)

Devices in a device family must have the same value for the Manufacturer ID, Device Type, Device Revision, and DD Revision (for FOUNDATION Fieldbus, these are Resource Block parameters MANUFAC_ID, DEV_TYPE, DEV_REV and DD_REV) (for HART, these are Command 0 variables). All members of a device family must share the same unmodified Device Support Files.

All members of the device family must be identified in writing by the manufacturer when the products are initially submitted for a Test Campaign.

An existing registered device can be expanded into a registered Device Family with a Device to Family Conversion. At the time of conversion to a device family, all members of the device family that will exist for a specific DEV_REV must be identified in writing by the manufacturer. At least one of the new family members must be provided to the FieldComm Group for Device Support File test and registration maintenance. The test administrator may run test cases from the original test system and perform other audits as necessary to verify that all requirements for a Device Family have been met. If registration of the Device Family is granted, standard FieldComm Group-assisted Device Support File testing service fees will apply, as will a Device to Family Conversion fee (see section 15.2.5). Only one Device to Family Conversion fee is applied during each Device Family Conversion test campaign.

Additional devices can be added to an existing device family in one of two ways:

1. The Device Family is incremented to a new device revision (DEV_REV) and one new member of the Device Family is re-tested on the current release version of the test system. During the new test campaign, the members of the device family can be modified per the request of the manufacturer. Family members can be added or removed. Only the family members named in writing by the manufacturer for the new device revision will receive a registration certificate and product registry on

the FieldComm Group website. Normal testing fees for a single test campaign and registration certificate fees for a Device Family re-registration will apply.

2. New family members can be added to an existing revision of a previously registered Device Family through a Family Member Add-On. At least one of the new family members must be provided to FieldComm Group for Device Support File Test. The test administrator may run test cases from the original test system and perform other audits as necessary to verify that all requirements for a Device Family have been met by the new family member(s). If registration of the Device Family is granted, standard FieldComm Group-assisted Device Support File testing service fees will apply, as will one Family Member Add-on Fee (see section 15.3.1).

14 Private Label and Rebranding Product Registrations

Private labeling occurs when a new manufacturer provides an existing registered device under a new brand. For example, Manufacturer B may private label a registered temperature transmitter from Manufacturer A. Rebranding occurs when the same manufacturer provides an existing registered product under a new brand or model name. For example, Manufacturer A may rebrand an existing temperature transmitter under a new device name or brand of products for a different market segment.

In both Private Labeling and Rebranding cases, the original equipment manufacturer (OEM) product must be a registered product.

The private label or rebrand manufacturer is required to provide written documentation that the communication protocol implementation and structure, physical layer interface, and device support files are identical to the OEM registered device except for the following possible differences:

1. Mechanical configuration of the device
2. Transducer Block initial values (FOUNDATION Fieldbus)
3. Identification information in the Capability File (e.g. Device Name for FOUNDATION Fieldbus)
4. FMS VFD Identification (FBAP for FOUNDATION Fieldbus)
5. Manufacturer Id (MANUFAC_ID in Resource Block for FOUNDATION Fieldbus, Command 0 for HART)
6. Device Type (DEV_TYPE in Resource Block for FOUNDATION Fieldbus, Command 0 for HART)
7. Device Revision (DEV_REV in Resource Block for FOUNDATION Fieldbus, Command 0 for HART)
8. Private Label Code (Command 0 for HART)

Only FOUNDATION Fieldbus OEM devices originally registered on the latest two (2) major versions of the ITK test system for FOUNDATION Fieldbus qualify for Private Label or Rebranding Registrations. The private label manufacturer is required to provide written documentation on letterhead from the OEM manufacturer acknowledging the private label variant of the registered device. This requirement does not apply to rebranding.

The private label or rebranded device shall be subject to a Device Support File Test. The device shall be subject to a test campaign audit which consists of a random set of test cases from the same test system used to register the OEM device. For example, if the OEM device was registered using ITK 6.1.1, the private label/rebrand device would be subject to random test cases from ITK 6.1.1. For HART products, test cases are selected to prove the commands, variables, device variables, unit codes, etc. are the same.

A private label or rebranded device is subject to the standard registration certificate fees for a device, whether it is a new device or a re-registered device. A standard private label or rebranding test fee will apply to each device test campaign and audit. A special legacy test system setup fee may also apply (see section 15.3.2).

15 Fees

There are typically two fees associated with fulfilling the Device Registration Process. The first fee relates to the actual testing of the device and audit of the process requirements. The second fee relates to the issuance of a new or updated registration certificate. Additional fees may apply under special circumstances listed below.

15.1 Testing Fees

15.1.1 Test Campaign Fee (FieldComm Group Lab)

The Test Campaign Fee applies to a device manufacturer submitting a device for test by the FieldComm Group. The campaign fee includes execution of the test campaign and issuance of a test report. Test campaign fees differ for each type of test campaign. Each test campaign fee includes a maximum number of hours of bench time and lab resources that should be required to provide the services associated with that type of test campaign. This includes running all test cases of a test campaign one time, plus re-running any that may have failed, up to the point where a failure is determined to be a problem with the DUT or with Device Support Files.

A test campaign may also require fees for additional test time. See 15.1.3 for more details regarding fees for additional test time.

The FieldComm Group publishes all current test campaign fees and the associated number of hours included in those fees on our website at https://support.fieldcommgroup.org

15.1.2 Test Campaign Fee (Fraunhofer Institute IOSB)

The H1 Stack Conformance Fee applies to a device manufacturer submitting a device's H1 stack for test by the Fraunhofer Institute IOSB, in Karlsruhe, Germany. The campaign fee includes execution of the test campaign and issuance of a test report.

The Test Campaign Fee Schedule for an H1 Stack Conformance test is available from the Fraunhofer Institute. Contact the FieldComm Group for information regarding testing at Fraunhofer IOSB.

15.1.3 Fees for Additional Test Time

A device which requires extra or unusual services and lab resources beyond what is expected for a typical test campaign, through no fault of FieldComm Group, will require fees for additional test time.

Additional test time is purchased in 4-hour blocks, with a minimum of 4-hours each calendar day that the test administrator is required to work with the device sample to continue testing. The hourly rate for additional test time is published on the FieldComm Group website at https://support.fieldcommgroup.org

Fees for additional test time may be required for any of the following reasons:

1. Effort creating device initialization files for a test system either because one was not provided by the manufacturer, or because the one provided was not sufficient to allow proper testing of the DUT.
2. Continued effort executing test cases that were previously verified to have failed due to a device problem, or a device configuration problem, and reporting of these failures to the device manufacturer. This includes executing tests after the initial test campaign results were reported to the manufacturer.

3. Effort providing bus monitor files, ANALYS files, wi-ANALYS files, HSniffer files, screen captures, supplemental test case logs, excerpts from specifications, etc. to provide further proof of a device problem after it has been previously reported to the device manufacturer.
4. Executing multiple passes through test cases or through an entire test suite because the device is designed in such a way that it cannot be tested in a single pass.
5. Effort spent manually running test cases that are normally automated, either because of missing wiring or due to limitations in the design of the DUT. (FOUNDATION Fieldbus examples of this would include failure to provide wires to enable simulation, or the use of an unusual method to enable write lock instead of using the expected jumper block or switch.) (HART examples include timeouts for device access, device specific commands for setup and modes.)
6. Creating and executing device-specific test cases for allowed, but unusual manufacturer-specific write checks that are rejected by a device and cause the release test case to fail.
7. Effort testing updated Device Support Files after those originally provided with the device failed the Test Campaign.
8. Executing multiple test campaigns that are required for special circumstances, such as testing both the stack and the FBAP of an HSE device, or testing a HART device in multiple physical layer and sensor configurations.
9. Flashing of firmware or replacement of parts*

* Removing and replacing parts in a device sample and flashing of device firmware are not part of the normal services provided by FieldComm Group, either before, or during a test campaign. The test administrator at FieldComm Group may, at their discretion, suspend a test campaign and return a device to the manufacturer if such services are requested or required. The manufacturer may provide the necessary tools and instructions to perform part swaps or firmware updates, but any damage to a device sample arising from attempts by FieldComm Group to provide these services are the sole responsibility of the device manufacturer. In all cases, the attempt to flash firmware or replace parts in a device sample will automatically result in one extra four-hour block of additional testing fees, whether the attempt is successful or not, even if the official test campaign has not yet started. Device samples which are modified during an ongoing test campaign, either by the replacement of integral parts, or by the flashing of firmware, will always require a restart to the test campaign.

15.2 Registration Certificate Fees

A device registration fee applies to a single device or a device family.

For a product re-registration, only one re-registration fee shall apply per test campaign. For example, in a FOUNDATION Fieldbus device, if both the function block application and device description were modified during a single test campaign, only the Device Re-Registration Certificate Fee would apply. In general only one certificate can be expected to apply to any single test campaign, because only one certificate is being granted to the device manufacturer, regardless of how many different components are included in that registration effort.

15.2.1 Registration Certificate Fee

The Registration Certificate fee applies to a new product or product family that completes the Product Registration Process. In this case, “new” means that the product or product family contains a value for the Device Type (DEV_TYP in FOUNDATION Fieldbus Resource Block or HART Command 0) that has not been previously used by the same device manufacturer with that MANUFAC_ID (Also in FOUNDATION Fieldbus Resource Block or HART Command 0).

15.2.2 Re-Registration Certificate Fee

The Re-Registration Certificate Fee applies to an existing registered product or product family that was both modified and also required to increment DEV_REV (returned in FOUNDATION Fieldbus Resource Block or HART Command 0) according to section 11.4, but otherwise continues to meet the registration requirements specified in section 7.

15.2.3 Physical Layer Re-Registration Certificate Fee

The Physical Layer Re-Registration Certificate Fee applies to an existing registered product or product family that only had an approved physical layer modification according to the protocol/technology requirements, but otherwise continues to meet the registration requirements specified in section 7.

15.2.4 EDD, EDD/CF, or FDI Device Package Re-Registration Fee

The EDD (for HART), or the EDD/CF (for FOUNDATION Fieldbus) or FDI Device Package (for either FOUNDATION Fieldbus or HART) Re-Registration Fee applies to an existing registered device or device family that was modified according to section 11.1 only but otherwise continues to meet the registration requirements specified in section 7.

15.2.5 Device to Family Conversion Fee

This Device to Family Conversion Fee applies to an existing, unmodified registered device that will be converted to a Device Family Registration.

15.3 Special Fees for Special Cases

Special fees may apply to certain types of test campaigns in addition to the normal testing fees or certificate fees.

15.3.1 Family Member Add-On Fee

The Family Member Add-On Fee applies to an existing, unmodified registered device family that will add one or more new members to the current DEV_REV (returned in FOUNDATION Fieldbus Resource Block or HART Command 0) of a Device Family that was previously registered.

15.3.2 Legacy Test System Setup Fee

The Legacy Test System Setup Fee applies when a DUT is required to undergo a test with an older version of the Test System and associated software than what is already configured for the test systems in the FieldComm Group Lab.

15.3.3 Test Results Audit Fee

The Test Results Audit Fee applies when the device manufacturer provides their own test results as part of the normal registration certificate maintenance of a FOUNDATION-registered device. At this time, this fee applies:

- When the device manufacturer provides an updated FF-652 H1 Physical Layer Test Report.
- When the device manufacturer provides self-test results for EDD/CF Device Support Files.

Other applications of the Test Results Audit Fee may be required for special circumstances as determined by the test administrator and FieldComm Group management.

15.3.4 Witnessed Testing Fee

At any given time, devices from different manufacturers may be under test in the FieldComm Group lab, along with other special projects, consulting services, meetings, and internal product development activities. For these

reasons, and reasons of existing non-disclosure agreements between FieldComm Group and each of our member companies prevent us from allowing unauthorized personnel in our main lab for more than just a brief tour on a visit to our offices. Therefore, it is not possible for us to allow customers to visit our main lab and witness an ongoing test of their product.

Customers wishing to be present in the FieldComm Group lab to observe a test campaign on one of their devices are required to provide a Witnessed Testing Fee each day they wish to observe an ongoing test.
A customer paying for Witnessed Testing will be provided with a dedicated test system, in a location outside of our main lab, so that they can witness the ongoing test of the DUT. The test administrator will be available on an occasional basis to meet the customer, start a test, verify a test is running normally, and to discuss or demonstrate failures to a customer. When tests can be automated, the test administrator may need to perform other duties or return to the main lab to continue testing other devices. A Witnessed Testing Fee does not provide a dedicated test administrator for the device under test being witnessed.

Detailed discussions of specifications, product training, or other forms of consultation are not included as part of the Witnessed Testing Fee.

Witnessed Testing Fees are in addition to the normal fees associated with a test campaign. Customers wishing to witness a test must notify FieldComm Group at the time they schedule a test campaign. Due to limited resources and staff or other scheduled activities in our offices, requesting a witnessed test may result in additional wait time for a test that could otherwise be scheduled at an earlier date if it were not to be witnessed.

Fees for a day of witnessed testing are published on our website, and must always be included on the purchase order when the test time is requested. A manufacturer who arrives to witness a test without prior notification and reservation of the special test time will not be allowed to witness a test in our offices under any circumstances.

16 Contact Information

16.1 FieldComm Group

FieldComm Group
9430 Research Blvd Suite 1-120
Austin, Texas 78759 USA
Tel: +1 512 792-2300
Fax: +1 512-792-2310
Web: https://support.fieldcommgroup.org

16.2 Fraunhofer IOSB

Information Management and Production Control (ILT)
Fraunhoferstr. 1
76131 Karlsruhe, Germany
Tel: +49-721-6091 321
Web: http://www.iosb.fraunhofer.de
Email: Michael.Theis@iosb.fraunhofer.de

16.3 ITEI

ITEI
Attn: HART Product Registration
397A Guanganmenwai St
Beijing 100055
Tel: +86 (10) 63322089
Web: https://support.fieldcommgroup.org

17 Document History

Date	PD10026 Version	Editor(s)	Changes to document
August 2016	1.0	Sean Vincent	Initial version