Objectives of the Compliance Program

• Develop a means of establishing compliance and interoperability with the Forum’s published open standards

• Develop a product certification program with a consumer recognizable trademark guaranteeing the NFC brand promise of compliance and interoperability
Questions to Answer

• To meet these objectives, the Compliance Committee had to answer the following questions:

  1. What does a device have to do in order to be certified?
  2. What needs to be certified, how will it be certified, and how do we track devices through the process?
  3. How and what do we have to test (or not test) for conformance and interoperability?
Status of Compliance Work

• Over 100 representatives of 30 member companies within the Forum have worked for the past 2-3 years on:
  – Defining Minimum Levels of Interoperability
  – Developing a Certification Program
  – Defining and developing Test Procedures, Tools, and Test Laboratory Relationships

• “First Wave Certification Program” should be ready within the year
Certification Terminology

• Certification: Procedure by which a (Certification) Body gives written assurance that a product, process or service conforms to specified requirements. [ISO 17025]

• Certification is usually based on testing of products.

• There are two main types of testing: conformance testing and interoperability testing.

• NFC certification may be based on conformance testing, on interoperability testing, or a combination. NFC Forum is using both for the First Certification Wave, but conformance testing is the ultimate goal.
Types of Testing

Conformance Testing

Interoperability Testing

Interoperability Test Bed

NFC Forum is focusing on Conformance Testing
More Certification Terminology

- Test cases define what to evaluate and how to conduct the evaluation.
- Plugfests, plugtests, bakeoffs are used for informal testing in order to test the specifications themselves, not for certification.
- Testing is done not to the mandatory features, but to the implemented features.
Certification Process Overview

Test tool Vendor

Validation Request
Test tool approval

Test tool approval

Test Tool Submission
Validation Results

Validation Third party

Test Lab

Initial Registration
Certification Request
Certification approval

Certification Applicant

Product submission
Test results report

NFC Forum

Certification Administrator

Certification Administrator

Vendor

Tool Sales

Tool Sales

Tool Sales

Tool Sales
Applicant for First Wave Certification must:

1. “Self Confirm” Device is compliant to certain existing NFC Forum Specifications, which may or may not have Test Cases available, including but not limited to:
   - Digital Protocol
   - LLCP
   - Activities
   - Others?
   - Tag Operation

2. Submit Device for Certification Test
   - Conformance Test using NFC Forum-Approved test tool
   - Conformance Test coverage will be different than Step 1, and will likely include Tag Operation, Digital Protocol, and Activity Specifications
The NFC Forum also strongly recommends some Interoperability Testing

- NFC Forum will define and support an interoperability test event ("plugfest") by using a "Test Bed" to decrease chances of interoperability issues
- Interoperability testing by the applicant is not required at this point in First Wave Certification. However, it is strongly recommended (could become mandatory).
- Certification will not be denied based on the results of interoperability testing
Target Schedule

Certification

1st Certification Wave
- Digital Protocol Activity
- Tag Operation
- LLCP (Peer-to-Peer)
- RF Analog

2nd Certification Wave
- (Advanced Certification)
- Digital Protocol Activity
- Tag Operation

Plugfest
- PlugFest 2009
- PlugFest 2010
- PlugFest 2011

TBD
Ongoing Activities

• High-Level Conformance Requirements (HLCR) document, which defines minimum levels of interoperability for certification

• Traceability Matrix to enable implementers to map requirements in the HLCR document to technical specifications

• Certification administration
  – Selected The Open Group as Administrator
  – Policy/ procedures almost complete
  – Development and implementation underway
Ongoing Activities (2)

• Developing partnerships with test equipment manufacturers
• Creating Requirements Catalogs, Test Purposes, and Test Cases (1800+ to date)
• Prioritizing, selecting and completing test cases for First Wave Certification
• Selecting the Test Tool Validation House
• Drafted RF testing requirements
• Now, one Plugfest per year
• December 2008: Plugfest and Testfest
  – Plugfest: More than 20 devices/tools/tags from more than 10 companies
  – Testfest: Three RFC Test Tool Manufacturers
  – Coverage:
    • All tag types (1, 2, 3, 4A and 4B)
    • Read and Write functions
    • Peer-to-Peer
    • Card Emulation
    • Protocol Testing
    • RF Measurements
• Planned Plugfest and LLCP Specification test session at September member meeting