



## ***Professionalism through Certification***

*The Institute for RFID Education, Research and Certification*

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# Certification Process

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# 1 Introduction

## 1.1 Purpose

The purpose of this document is to provide a process for developing and approving radio frequency identification certification programs under the RFID Professional Institute.

A fair, open and unbiased process is critical to the creation of certification tests that will properly reflect the skills and knowledge of those seeking certification and serve the needs of RFID solution providers, end users and others seeking to evaluate the skills of potential employees or service providers.

## 1.2 Scope

This process describes the roles, activities and rules governing the development and approval of RFID Professional Institute certification programs.

## 1.3 Document Management

All versions of this document are managed and controlled by the RFID Professional Institute Board of Directors. The Board is also the owner of the processes involved with managing this document and future iterations of this document and is responsible for maintaining this document. The document is accessible on the Institute web site: [www.rfidpros.org/process](http://www.rfidpros.org/process).

## 1.4 Document Change History

Version	Date of Change	Changed By	Required Information
0.1	27-July-12	Mark Roberti	Original Draft
0.2	19-Aug-13	Mark Roberti	Revised to reflect members decision to have a business case analysis, job task analysis and common knowledge document for each new certification created
1.0	03-Sep-13	Mark Roberti	Final formatting modifications to draft approved by the Board of Directors on Aug. 30, 2013
1.1	30-Nov-14	Ian Robertson	Change of logo and references to International RFID Professional Institute to reflect Board approved change of name for the Institute

## 2 Process Management

### 2.1 Tasks and responsibilities

This section spells out the specific tasks required by the certification process and the officers or committees responsible for carrying out those tasks.

<b>Task</b>	<b>Person/Group Responsible</b>
Approve the creation of a new certification for the RFID industry	Board of Directors
Appoint a Certification Committee to manage the process of creating the new certification	Board of Directors
Supervise the Certification Committee and tracks deliverables through the process from development to approval of a new certification	Board of Directors
Appoint an SME Nomination Committee to evaluate new SME applications and recruit existing SMEs	Board of Directors
Recommend a slate of SMEs to participate in the create of new certification program	SME nomination committee
Approve SMEs who will contribute to the new certification	Board of Directors
Develop a certification development schedule for Board approval	Certification Committee
Manage the certification development processes and update the Board on progress	Certification Committee
Assume overall responsibility for the development of the new certification and act as chairman of the committee	Certification Committee Chair
Provide status reports on the progress of each deliverable to the Board	Certification Committee Chair
Provide feedback on proposed scope of new certification, as well as weightings for topics covered in the new certification,	Subject Matter Experts
Contribute items (questions) for the certification test	Subject Matter Experts (Item Writers)
Edit questions submitted by item writers	Subject Matter Experts (Item Editors)

<b>Task</b>	<b>Person/Group Responsible</b>
Approve the certification exam, which will be made up of the bank of questions submitted and edited by SMEs	Board of Directors

## 2.2 Materials

This section describes the documents and tools necessary for the development and approval of new RFID certification programs. The documents are broken down into documents, templates and tools.

Title	Type	Location
SME Application Form	Tool	Survey Gizmo
Task analysis	Template	Document repository
Knowledge domains	Template	Document repository
Certification development schedule	Template	Document repository
Certification blueprint	Template	Document repository
Question submission form	Tool	Survey Gizmo
Question bank	Database	Survey test engine

## 3 Process description

### 3.1 Overview

#### 3.1.1 The certification process

The steps described below are designed to ensure consistency, openness and fairness in the certification programs and individual test questions created by the RFID Professional Institute. They are also designed to ensure consistency in the certification development process across multiple certification programs.

Step	Activity
1	Board initiates a business case analysis to understand the potential of a new certification program.
2	If the business case analysis suggests the need for a new certification program, the Board approves the development of a new RFID certification and defines the broad scope of the certification program.
3	The Board appoints a Certification Committee to lead the development of the new certification program and names one person to chair the Certification Committee.
4	The Board appoints an SME nomination committee that will evaluate new SME applications and make recommendations to the Board.
5	Where appropriate, the Certification Committee undertakes a task analysis to understand what skills and knowledge those doing the job related to the certification need.
6	The Certification Committee solicits input from SMEs and the broader RFID on what should be included and excluded from the certification program as well as the relative weightings each topic should receive.
7	The Board publicly announces the plan to create a new certification program and outlines a rough timetable for the process.
8	The Certification Committee recruits new subject matter experts and invites existing SMEs to help write and edit test questions
9	New SMEs are evaluated by the nomination committee, which recommends to the Board which candidate should be approved.
10	The Board of Directors approves or rejects SMEs recommended by the nomination committee.
11	The Certification Committee creates a blueprint for the new certification program. The blueprint consists of the topics to be covered as well as the relative weightings for each subject covered in the certification.

Step	Activity
12	The Board publishes the blueprint for the exam, which includes the topics to be covered and the proposed weightings for each, and requests input from the RFID community.
13	The Certification Committee creates a common knowledge document from which items (questions) are developed.
14	SMEs submit items.
15	SME editors revise submitted items.
16	A group of beta-testers reflective of the population likely to seek RFID Professional Institute certification is invited to take the certification test to help evaluate the quality and fairness of the questions.
17	Any poorly worded or biased items are revised, removed or replaced in the item bank.
18	The Board approves the new certification program and announces that testing can begin.

## 3.2 Process deliverable

The following is a list of deliverables required during the development of a new certification:

- Business case analysis
- Task analysis
- Certification development schedule
- Certification blueprint
- Common knowledge document
- Final exam item bank

### **3.3 Tasks**

#### **3.3.1 Initiate Business Case Analysis For Certification Program**

The Board of Directors, having already approved a long-term roadmap for the development of a series of certifications covering various aspects of RFID technology, will initiate a business case analysis to determine the market and industry need for a new certification program. This will include, but not be limited to, surveying the RFID community and soliciting input via the RFID Professional Institute Web site.

#### **3.3.2 Approve Development of New RFID Certification Program**

Based on the results of the business case analysis, the Board of Directors approves or rejects the development of a specific certification exam. If the Board approves development of the exam, the Board will outline the broad scope of topics or subject matter to be covered by the new certification program.

#### **3.3.3 Create Certification Committee of Institute Members**

The purpose of this committee is to take responsibility for ensuring that the work of creating the certification test is done in a timely, efficient, objective and unbiased manner. The Board will request volunteers to sit on the committee and will appoint one committee member to chair the Certification Committee. Committee members will:

- Be members of the RFID Professional Institute in good standing
- Have signed the RFID Professional Institute non-disclosure and IP agreement
- Have signed the RFID Professional Institute Conflict of Interest Agreement

#### **3.3.4 Job Task Analysis**

The Certification Committee will, where appropriate, undertake a study to determine the common skills and knowledge needed by those doing the tasks the new certification program is meant to address.

#### **3.3.5 Solicitation of input**

As part of the skills and knowledge analysis, the Certification Committee may choose to survey RFID Professional Institute members, as well as nonmembers, about what specific topics should be covered under the new certification program as well as the relative importance of topics. The survey will be created by the committee, submitted to the RFID Professional Institute Board for review and then published on the RFID Professional Institute Web site.

#### **3.3.6 Development of Common Knowledge Document**

The Certification Committee will put together a common knowledge document from which certification items will be development.

#### **3.3.7 Certification Development Schedule**

The Certification Committee will develop a schedule for the new certification program, which will include a timeline for specific milestones and deliverables.

### 3.3.8 Public Announcement

When the scope of the new certification program is determined, the RFID Professional Institute should publicly announcement that a new certification program will be created. The purpose is to provide clarity and transparency about the process and encourage participation. The Institute will publish on its Web site the following information about each new certification program:

- Title of the certification program (e.g. Passive UHF RFID Certification, Active Real-Time Location System Certification)
- The purpose of the specific certification program (e.g. to ensure that successful candidates have an understanding of the technical issues and business issues related to the deployment of a Near-Field Communication system)
- Scope of the certification test (a broad statement about what will be covered)
- Date for SME recruitment to begin
- Statement of the expected time period when SMEs will be informed of their successful or unsuccessful application
- Statement of the expected time period for questions to be submitted
- Statement of the expected time period during which questions will be edited and revised
- Statement of the expected time period for when beta testing or psychometric evaluation of questions will occur.
- Statement of when questions will be approved and testing can begin
- Statement of whether the test will be high-stakes, low stakes or something else.

### 3.3.9 Recruitment and approval of Subject Matter Experts (SMEs)

Once the scope of a new certification program has been determined and public announcement has been made, the Certification Committee will begin to recruit subject matter experts (SMEs). The Certification Committee may invite SMEs from previous certification programs to participate in the new certification program, if they possess the requisite skills, knowledge and experience.

Additional RFID industry experts will be encouraged to apply for SME status during the six (6) weeks following the public announcement of a new certification program. The Certification Committee can add additional SMEs at any time, provided they have the requisite skills, knowledge and experience and are so approved by the Board.

### 3.3.10 SME Approval

The Board will establish an SME Review Committee to evaluate the candidates and make proposals to the Board. The Board will approve or reject SMEs in a timely manner.

### 3.3.11 Publication of the Exam Blueprint Draft

- The Board shall publish on the RFID Professional Institute Web site a blueprint for the new certification test. The blueprint shall include:
  - The knowledge domains to be covered
  - The weightings each knowledge domain will be assigned
  - The specific topics to be covered under each knowledge domain

- The Board will invite commentary from the general public on the blueprint during a one-month period.

### **3.3.12 Blueprint Revision and Approval**

Following the conclusion of the one-month comment period, the Certification Committee will make adjustments to the knowledge domains, weightings and topics covered and submit a revised blueprint to the Board for approval.

### **3.3.13 Item-Writing**

Following the approval of the final blueprint for the new certification program, the SMEs will begin submitting items (questions) via the method prescribed by the Certification Committee. To ensure consistency, quality and fairness, only questions submitted by the prescribed method will be accepted and considered for inclusion in the certification exam.

### **3.3.14 Item Editing**

SMEs not involved with RFID training or testing will be designated as question editors. Editors will revise or discard questions submitted by SME question writers, with the goal of making the questions as clear, concise, fair and objective as possible.

An audit trail will be created for each question, so that the Board can review the original question and changes made to it over time.

### **3.3.15 Beta Testing**

A number of individuals reflecting the general population of those likely to seek the certification will be invited to take the test prior to its official approval. The aggregate results of correct and incorrect answers for each question will be examined to determine whether a question needs to be edited or discarded. Those analyzing the results of the beta test will not see the actual questions, only the percentage of correct and incorrect answers.

### **3.3.16 Test Revision**

If questions need to be edited or discarded, SME editors will make the appropriate changes.

### **3.3.17 Approval**

The Board will review the results of the beta test and approve or reject the certification program. The Board may choose to send some questions back for additional work. If the Board rejects so many questions that the total item bank falls below the number needed the Certification Committee will seek new SME question writers and request additional questions from existing question writers. These questions will be submitted to the SME editors and the process of editing and beta testing will be repeated.

### **3.3.18 Announcement Of New Certification Program**

When the Board approves the certification program, an announcement will be made and a date set for when certification testing may begin.

## 4 Post-Publication Tasks

### 4.1 Monitoring and Quality Control

As it is important for the RFID Professional Institute to continue to monitor the quality of each certification program, testing companies will be required to report the overall scores of each certification candidate as well as the accuracy of answers to each question to the RFID Professional Institute.

#### 4.1.1 Review of Test Results

The Certification Committee will review the aggregate test results and scores for individual items no less often than every three months. Items with an excessive percentage of correct or incorrect answers will be re-examined. Any questions deemed to be unfair, unclear, or flawed in any other way would be revised or removed from the item bank.

To maintain the required number of questions in the item bank, the Certification Committee may ask new or existing subject matter experts to draft and edited new questions. These will be submitted to the Board for approval.

#### 4.1.2 Updating the Exam

In addition to reviewing scores and addressing problems with specific items, the Certification Committee will make periodic updates to the items in the certification item bank.

At least once a year, the Certification Committee will make recommendations to the Board on whether the certification item bank needs to be updated with new items to address advances in the technology, changes to standards or other important developments related to the work of those being certified. The Committee may also recommend to the Board, or the Board may require the certification committee, to refresh the item bank with new questions to ensure the certification program remains relevant to the RFID community.