Administrative Process

Version 2.6
February 2017
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Revision Log – Version 2.6

The following changes have been made to the document since the publication of Version 2.5. Some of the numbering and cross references in this version have been updated to reflect changes introduced by the published bulletins. The numbering of existing requirements did not change, unless explicitly stated otherwise.

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1 Introduction

EMVCo, LLC (“EMVCo”) is the manager of the EMV Contactless Specifications for Payment Systems- Book A & B, Kernels C-1 to C-7 and Book D Specifications hereinafter called the EMV Contactless Specifications.

EMVCo’s objective described in this document is to provide a Type Approval process for Contactless Product that addresses the following EMV Contactless Specifications:

- EMV Contactless Specifications for Payment Systems – Book A & Book B
- EMV Contactless Specifications for Payment Systems – Books C-n

Note: EMV Contactless Specifications for Payment Systems – Book D. The type Approval process is addressed in a separate process document dedicated for L1.

Common industry practice requires Product Providers to accommodate local Acquirer requirements in their Product. These Acquirer requirements are out of the EMVCo type approval scope. The Product Software Architecture plays a significant role in determining whether complying with non-EMV acquirer requirements are likely to impact the approved EMV Contactless product. EMVCo limits type approval to the EMV Contactless product, leaving the responsibility to the appropriate local acquiring entity (also referred to as the owner of the environment of use) to validate continued compliance with the EMV Contactless Specifications functionality in the integrated acquiring environment.

All readers of this document are advised that type approval, when granted by EMVCo, shall not be construed as a warranty or representation of any sort, nor may it be relied upon by any party as an assurance of quality or functionality of any product or service. Please note the legal notice stated above at page 2 of this document for important limitations on the scope of type approval.

1.1 Audience

The target audience of this document includes:

- Product Providers
- Laboratories accredited to perform the type approval tests
- Auditors acting on behalf of EMVCo

1.2 Normative References

<table>
<thead>
<tr>
<th>Reference</th>
<th>Publication name</th>
<th>Bookmark</th>
</tr>
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1.3 Definitions

The following terms are used in this specification:

Card - A payment card as defined by a payment system.

CATA – Card And Terminal Approval.

Check Sum - A Product Provider-generated value (minimum 4 bytes) for each module. This checksum must be a unique value for each module. The method or algorithm used for
generating the checksum is left to the discretion of the Product Provider. For example, a Product Provider may choose to implement SHA-1 or CRC. These values shall be easily retrievable for each Kernel Module, Software Module, External Libraries or Entry Point Module when loaded in the Product and this for comparative purposes. Refer to annex B for more details on Checksum defined rules.

Compliance - Meeting all the requirements including any implemented optional requirement(s).

Contactless Kernel C-REGX – The proprietary kernel software located in the Contactless Product where x is a registered Kernel ID using the EMVCo kernel ID registration process. C-REGX does not refer to EMVCo Kernel C-n.

Entry Point Module – A POS System software managing application (AID) and kernel selection according to [Book B].

Function – A process accomplished by one or more commands and resultant actions that are used to perform all or part of a transaction.

Implementation Conformance Statement (ICS) - A form completed by the product provider. The written statement lists all optional functions as specified in the EMV Contactless Specifications.

Integrated circuit(s) - Electronic component(s) designed to perform processing and/or memory functions.

International Organization for Standardization (ISO) - An international body that provides standards for financial transactions and telecommunication messages. ISO works in conjunction with the International Telecommunication Union (ITU) for standards that affect telecommunications. ISO supports specific technical committees and work groups to promulgate and maintain financial service industry standards.

Interface - Technical requirements for exchanging data and functions between two software modules.

Kernel C-n - Is a software Module compliant to one of the [Book C-n] specifications.

Letter of Approval - Written statement that documents the decision of EMVCo that a specified Product has demonstrated sufficient compliance to the EMV Contactless Specifications on the date of testing.

Lower Tester – Card simulator of the test tool that communicates with the product under test. The LT shall be in accordance with section 7 of the present document.
Main Laboratory – The Laboratory performing Book A & B testing, Independency testing and Modular testing for a Product approval.

Major modification - Technical change to the EMV application or addition to the application that implies the product provider cannot guarantee continued compliance of the modified application with the requirements of EMV Contactless Specifications, as defined by EMVCo.

Minor modification - technical change to the EMV application that does not affect the functionality of the application with respect to the requirements of EMV Contactless Specifications, as defined by EMVCo.

Modular Architecture – A software architecture that follows the requirements defined in this document. A Product developed based on an Architecture that has received a Modular Label can be submitted for type approval under the ‘Optimized Process’.

Modular Label - Written statement that documents the decision of EMVCo that the Product Providers specified software architecture has demonstrated sufficient compliance to the EMV modular requirements on the date of the audit.

Optimized Process – Type Approval process for Product(s) developed based on the Product Providers Architecture that has received the Modular Label and continues to adhere to the Modular Architecture as confirmed by specific tests defined by EMVCo.

PCD - Proximity Coupling Device. A device of the Product that uses inductive coupling to provide power to the PICC and also controls the data exchange with the PICC.

POS System - According to definition Book A in section 4.3. It is the device that communicates with contactless cards, processes contactless transactions, and may support other payment functionalities such as magnetic stripe or contact chip transactions.

Procedure - Specified way to perform a set of tasks.

Product - According to the definition in section 4.1. which defines the product to be type approved during the Type Approval process.

Proficiency - Ability of a testing laboratory to perform the specified tests in an exact and reproducible manner and to provide an accurate test report.

Protocol - Method of communication between the ICC and the PCD, represented in this specification by Type A and Type B.
Reference specification (EMV Contactless Specifications) - A set of documents defining the requirements the Product shall comply with. The reference specification consists of the current EMV Contactless Specifications (Book A, B, C-n, D) for Payment Systems and any additional documentation required when performing type approval.

Registration number - A unique identification number assigned by EMVCo to a product provider.

Request for approval - A form that goes with a product submitted to EMVCo for type approval and marks the launch of its invoice.

Sample - A product taken out of the production line for testing.

Standard Process – Type Approval process for Product which are not compliant with the modular architecture according to [TA Archi],

Software Module - A self-contained program that carries out a clearly defined task and is intended to operate within a larger program suite. Mainly a module represents a Kernel C-n or Entry Point.

Terminal - According to book A definition in section 5.1. Terminal could be a standalone device or any networked solution such as a POS, a ATM, a PIN PAD or any other physical payment device.

Test - Any activity that aims at verifying the compliance of a selected product or process to a given requirement under a given set of conditions.

Test case - A description of the actions required to achieve a specific test objective.

Laboratory - A facility accredited by EMVCo to perform Type Approval testing.

Test Kernel – Software simulating a Contactless Kernel that must be present in the product under test for testing reason. The Test Kernel present shall be in accordance with section 6.1 of the present document.

Type approval – The acknowledgment by EMVCo that the specified Product has demonstrated sufficient compliance to the EMV Contactless Specifications for its stated purpose.

Type approval documentation - Full set of documents and procedures issued by EMVCo to enable the type approval process.
Type approval process - The processes that test a product for compliance with specification.

1.4 Notational Conventions

1.4.1 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>FIT</td>
<td>Fully Integrated Terminal</td>
</tr>
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<td>ICC</td>
<td>Integrated Circuit Card</td>
</tr>
<tr>
<td>ICR</td>
<td>Integrated Card Reader</td>
</tr>
<tr>
<td>ICS</td>
<td>Implementation Conformance Statement</td>
</tr>
<tr>
<td>IEC</td>
<td>International Electrotechnical Commission</td>
</tr>
<tr>
<td>IFM</td>
<td>Interface Module</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
</tr>
<tr>
<td>Lab</td>
<td>Laboratory</td>
</tr>
<tr>
<td>LoA</td>
<td>Letter of Approval</td>
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<tr>
<td>M-ICR</td>
<td>Multi Component ICR</td>
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<tr>
<td>ML</td>
<td>Modular Label</td>
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<td>PCD</td>
<td>Proximity Coupling Devices</td>
</tr>
<tr>
<td>PICC</td>
<td>Proximity Integrated Circuit Card</td>
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<tr>
<td>RFA</td>
<td>Request for Approval</td>
</tr>
<tr>
<td>PRP</td>
<td>Product Provider</td>
</tr>
<tr>
<td>S-ICR</td>
<td>Single Component ICR</td>
</tr>
<tr>
<td>TTA</td>
<td>Terminal Type Approval</td>
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1.5 Terminology & conventions

The following words are often used in this specification and have a specific meaning:

Shall
Defines a product or system capability which is mandatory.

May

Defines a product or system capability, which is optional or a statement which is informative only and is out of scope for this specification.

Should

Defines a product or system capability, which is recommended.

The following conventions apply:

Value of Parameters

Throughout the specification, symbols are used to identify the values of parameters. The permitted values of the parameters are listed in Annex A and are written in Arial bold to distinguish them in the text. When used to define timings, frequencies, etc., it is the actual value that is intended. For example fc is the actual carrier frequency from the PCD.
2 Type Approval Overview

2.1 Scope of Contactless Type Approval

2.1.1 EMVCo Contactless Terminal Type Approval Process Goal
EMVCo terminal type approval contactless ascertains the level of confidence that Product Providers have correctly implemented the EMV Contactless Specifications. Product Providers submit their Product with the software and appropriate documentation, including the Implementation Conformance Statement (ICS), to an EMVCo accredited Laboratory for testing. The Laboratory executes a set of EMVCo-defined test cases and prepares a test report document for the Product Provider that may then be submitted to EMVCo for evaluation. EMVCo’s evaluation of the test report concludes with the issuance of a Letter of approval or decline notification.

Obtaining an EMV Product approval from EMVCo has the following advantages:

• Acquirers have access to terminal implementations in respect of which compliance to the EMV Contactless Specifications has already been tested - yielding a likely reduction in testing costs as well as improved time to market for final implementations.
• Product Providers can sell the approved EMVCo compliant product on a worldwide basis and differentiate themselves from the competition.

2.1.2 Contactless Terminal Architecture: the Product
This section defines the Contactless Product (called the ‘Product’) that is tested by the Contactless Type Approval process. The Product is based on the POS System defined in Book A.

A POS System is the device that communicates with contactless cards that processes contactless transactions, and may support other payment functionalities such as magnetic stripe or contact chip transactions. The basic functions of the POS System include:

• Communication with contactless cards.
• Application selection and kernel activation.
• Displaying messages to the cardholder.
• Displaying messages to the merchant.
• Accepting merchant data entry of the transaction amount.
• Cardholder verification (e.g. signature).
• Provision of online connections.
• Provision of data capture for clearing and settlement.
• Additionally Entry Point and Kernels C-1 to C-7 shall be located in the POS System.

The physical architecture of the POS System can be any of the following, according to Book A definition:

• Fully integrated terminal 'FIT': All elements included in a single device.
• Intelligent card reader ‘ICR’: The reader handles most of the contactless
transaction processing, passing the results for completion by the terminal.

- Combination of terminal and transparent card reader: The reader provides communication with the card, while kernels and other processes are in the terminal.

**Note:** The Terminal described in these below definitions can be any physical device such as a POS, an ATM, a PIN PAD, etc...

### 1/ Fully Integrated Terminal (FIT)

All elements of POS System included in a single device.

**Figure 1: Fully Integrated Terminal**

The FIT includes:

- A valid Level 1 Contactless PCD with an EMVCo Letter of Approval according to Book D.
- Entry Point and POS System Architecture according to Book A and B
- EMV Kernels according to Book C-1 to C-7 including (refer to note below):
  - Kernel transactions flow,
  - Kernel functions,
  - EMV data management,
  - Cryptography,
  - ...
- Consumer & merchant interface(s).
- If present, the contact and mag stripe part of the FIT:
  - IFM (L1),
  - EMV contact Kernel (L2).
- Acquiring Network interface.

In this definition, the Fully Integrated Terminal and POS System are identical and contain the Product.

### 2/ Intelligent Card Reader (ICR)

The reader handles most of the contactless transaction
processing, transmitting the results for completion to the terminal. Two implementation scenarios are possible:

- **Single Component ICR (S-ICR):** First scenario, where all EMV components (EMV requirements defined in Book A, B, C and D) are in the reader. The Product submitted for approval will be the reader alone:

  **Figure 2: Single Component ICR (example 1)**

![Diagram showing Single Component ICR](image-url)
The ICR includes:

- A valid Level 1 Contactless PCD with an EMVCo Letter of Approval according to Book D.
- Entry Point and POS System Architecture according to Book A and B.
- EMV Kernels according to Book C-1 to C-7 including (refer to note below):
  - Kernel transactions flow,
  - Kernel functions,
  - EMV data management,
  - Cryptography,
  - ….
- If present, the contact part of the ICR:
  - IFM (L1),
  - EMV contact Kernel (L2).

In this definition, the Intelligent Card Reader and Product are identical and are part of the POS System.

Note: if present, the Contact part can reside either in the Terminal or in the ICR [See Figure 2 & 3].

- Multi Component ICR (M-ICR): Second scenario, where most of the EMV components (EMV requirements defined in Book A, B, C and D) are in the reader. The Product submitted for Approval will be the reader and the associated identified Terminal:
The ICR includes:

- A valid Level 1 Contactless PCD with an EMVCo Letter of Approval according to Book D.
- Part of Entry Point and POS System Architecture according to Book A and B.
- Part of EMV Kernels according to Book C-1 to C-7.
- If present, the contact part of the ICR:
  - IFM (L1),
  - EMV Contact Kernel (L2).

In this definition, the Intelligent Card Reader is part of the Product, which is part of the POS System.
Note: if present, the contact part can reside either in the Terminal or in the ICR [See Figure 4 & 5].

3/ Combination of terminal and transparent card reader: The reader provides communication with the card, while kernel and other processes are in the terminal:

Figure 6: Transparent Reader Combination (example 1)
Figure 7: Transparent Reader Combination (example 2)

Note: In case the reader contains the PCD L1 hardware (analog only), and, if the PCD L1 Digital software is not present in the reader but in the terminal, then the Product is considered as a Fully Integrated Terminal (FIT).

According to the above definitions: a Contactless Product submitted for approval shall always include the following:

The part of POS System according to the above definitions which include:

- A valid Level 1 Contactless PCD with an EMVCo Letter of Approval according to Book D.
- Entry Point and POS System Architecture according to Book A and B.
- EMV Kernels according to Book C-1 to C-7, including (please refer to note below):
  - Kernel transactions flow,
  - Kernel functions,
  - EMV data management,
  - Cryptography,
  - ….
- If present, the contact part of the ICR:
  - IFM,
  - EMV Contact Kernel.

Note: If a Kernel C-n module, or Entry Point module is not a self-containing module (for example using external crypto library), the computation of the Checksum of that Kernel C-n module shall include the external library, sub modules used by this Kernel according to annex B.
2.1.3 Multi Kernel Environment

The contactless Product submitted for approval works in a Multi-Kernel environment. This means that one or several Kernels C-n (C-1 to C-7) are present at the time of testing and will be tested independently.

The number of Kernels (C-1 to C-7) present in the Product for approval depends on the Product Provider’s decision. He may decide to submit a Product containing one Kernel (as a minimum) or up to 7 Kernels for approval.

Approval will be granted to the corresponding Product and is valid only for that configuration reflecting the specific Kernel(s) present during approval.

A Product Provider can decide at anytime to enhance the Product by adding/deleting/changing a Kernel (or Entry Point). However this shall result in a new approval if required to that Product, reflecting the new Product.

When the Product contains also the Contact EMV Kernel, approval will be granted on the overall Product covering contact and contactless in a single LoA.

When the Product contains any software or kernel not described by EMVCo and changes occur to such software, it is considered as a change to the Product, hence, section 8 ‘changes’ applies.

2.1.4 Modular Approach Principles

EMVCo will consider two Type Approval processes for contactless Products depending on the software implementation:

- ‘Optimized Process’ for Products using the Modular Architecture according to [TA Archi], where the Product is considered compliant to the Modular Architecture by EMVCo.
- ‘Standard Process’ for all other implementations.

A Product Provider claiming that his Product follows the Modular Architecture needs to perform the Compliance audit as the first stage of the process. The goal of this Compliance audit is to ensure that the Product submitted complies with the EMVCo Modular Architecture requirements with a Product Provider Modular Architecture audit, performed by an EMVCo Qualified Auditor. (see [TA Archi] for further details).

The positive result of this audit is a Modular Label (ML) of the Modular Architecture implemented in the Product submitted for approval.

This Modular Label is valid for all Products submitted by the Product Provider implementing identical Modular Architecture, therefore, several products may be submitted for approval using the same Modular Label, as long as these products implement the same Modular Architecture.
2.2 EMVCo Contactless Type Approvals Description

2.2.1 ‘Standard Process’ for Contactless Type Approval

The following rules shall apply to Products submitted to EMVCo for formal approval when the Product does not implement Modular Architecture. These rules do not apply to debug testing that may be conducted directly between the Laboratory and Product Provider.

- All functional options, L1 Approved PCD and Kernels (C-1 to C-7 and Proprietary kernels) must be identified on the ICS to reflect the Product configuration submitted for approval.
- The laboratory must validate and submit a copy of the completed ICS to EMVCo prior to performing type approval testing. EMVCo will review the statement for accuracy, archive the form for later comparison, and send an acknowledgement that the ICS is acceptable for testing. If a contact EMV Kernel is present in the Product and changes made to the Product, then the complete Product shall be retested (both contact and contactless).
- When the Product contains any other software or kernel not described by EMVCo, if any changes to such software occur, then this is considered as a change to the Product, and the complete Product shall be retested (both contact and contactless).
- Approved Products are retained by the Laboratory for a period of 4 years as of the date of approval. The Product Provider is responsible for providing support as necessary to maintain the product in an operational state to accommodate any subsequent testing or analysis that may be deemed necessary by EMVCo.

2.2.1.1 Request of Approval

EMVCo assesses compliance of the Product design against the EMV Contactless Specifications and Type Approval requirements. To determine conformance, reference implementations of the Product must undergo predefined tests in a specified test environment (EMVCo Accredited Laboratory).

The Product submitted to Laboratory shall be submitted with a Contactless Level 1 (PCD) complete with valid LoA and must be representative of final deployment.

The Letter of Approval will be granted on the complete Product (including the hardware, and the contact LoAs if applicable).

After the Letter of Approval has been granted, it remains valid as long as the following applies:

- The approval is not revoked by EMVCo.
- The LoA is valid for the period of approval duration.

Any change to the Product creates a new Product, whether it occurs before, during, or after deployment. Type Approval of that new Product is not presumed.

Note: It is assumed that if contact is present in the Product, the Contact LoA has been granted previously or in parallel.
2.2.1.2 Renewal Request for Approval
A Product approval is valid for 3 years. The starting date is the date of the initial approval.

Every 3 years, EMVCo evaluates whether the product demonstrates sufficient compliance to the current EMV Contactless Specifications. If the evaluation results are positive then EMVCo grants an extension to the Product Letter of Approval.

The following rules will be applied to Renewal Requests:

- The Product on going LoA is still valid at the time of renewal.
- The Level 1 LoA must be valid at the time of renewal.
- The contact L1, L2 LoAs are still valid at the time of renewal (if contact is present in the Product).
- All EMV Contactless Specifications are still valid ([Book A], [Book B] and [Book C-n]).
- All EMV Contact Specifications are still valid (Book [N1] [N2] [N3] and [N4]) (if contact is present in the Product).

After the renewal date, products not passing renewal testing nor applied for renewal testing will be removed from the approved list and their Letter of Approval will be considered revoked.

2.2.1.3 Laboratory testing procedure for ‘Standard Process’

Testing procedure for approval:

Laboratories perform testing of Products under the following rules, for each testing session:

- Kernels C-1 to C-7 testing for all Kernels declared in the ICS and present in the Product submitted. The testing is performed using the independent test plans related to the kernels C-1 to C-7 (Kernels present maybe tested over several laboratories as described in section 6.4.1.1 and 6.4.1.2). Kernel testing covers two parts for each Kernel:
  - Kernel functional testing (one test plan per Kernel) using [TA C-n],
  - Performance testing (one test plan per Kernel) using [TA P].
- Multi-Kernel Independency testing as described in [TA M], where only the independency test set applies (no modular testing). This set of tests ensures that there is no corruption between Kernels present in the Product.

Testing procedure for renewal

Laboratories shall perform renewal testing of Products under the following rules:

- Delta testing of each module present (Book A & Book B, kernels C-1 to C-7): performing the delta tests (used test plans vs latest test plans available).
- Regression testing of each module present (Book A & Book B, kernels C-1 to C-7): performing tests from the latest test plans available.
- Independency full testing.
- If needed, renewal rules for the contact regression applies.
- Laboratory shall confirm that the Checksum(s) are identical with the previously approved Product.
**Transaction Type Testing:**

Section IV of the Contactless Product ICS, requests the transaction type(s) ‘supported and activated’ for each Kernel present in the Contactless Product.

When a transaction type is supported and activated at a kernel level then it is considered supported and activated at the product level and the related tests shall be executed.

Example: Product contains: C-1 which supports ‘Purchase’ and C-2 which supports and activates ‘Purchase’ and ‘Refund’:

- Book A & Book B (Entry Point) testing using [TA A&B] test plan performs all applicable tests with Purchase and Refund (eg: 2EA.002.02 applies)
- Kernel C-1 using [TA C-1] and using [TA P] performs all tests with Purchase (if tests contain this option).
- Kernel C-2 using [TA C-2] and using [TA P] performs all applicable tests
- Multi-Kernel Independency testing using [TA M] performs
  - For C-1 all tests with Purchase
  - For C-2 all tests with Purchase and all tests with Refund

**Note 1:** all steps above must be run on the final software module versions for the approval testing procedure. If any failures occur, then the whole set of tests must be re-run until a successful completion is achieved.

**Note 2:** all steps above for renewal testing must be run on the already approved product.

**Note 3:** Checksum values of each module and sub modules; as well as untested modules, shall be retrieved from the Contactless Product submitted and checked by the Laboratory against value declared by the Product Provider. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product.

**Note 4:** When the Performance testing is applicable, the Product Provider shall at the same time complete the Performance declarative form and provide it to EMVCo.

**Note 5:** ‘Support and Activation’ of the transaction type implementation depends on each Kernel, for example for C-3 if the transaction type is supported it is automatically activated.

### 2.2.2 ‘Optimized Process’ for Contactless Type Approval

#### 2.2.2.1 Compliance Audit

For submission of Products following a Modular Architecture a Compliance Audit is required. Any Product claiming to actualize this Modular Architecture shall apply the following rules as the first stage of the Type Approval process (or in parallel of the Initial submission):

- Select an EMVCo qualified Auditor
- Submit to the Auditor all required documentation on the Product’s Modular Architecture. Internal Product Provider testing documents are required.
- Auditor performs the audit based on:
  - The documentation received,
  - On-site visit of the Product Provider development capabilities,
- Auditor returns the results back to the Product Provider.
- Product Provider verifies the audit report provided by Auditor
Product Provider and Auditor sign the audit report results.
Product Provider submits a Request for Compliance to EMVCo.
Product Provider provides the signed audit report to EMVCo.
EMVCo will review the statement for accuracy, and the results of the audit.
If the results are considered as acceptable, EMVCo will issue a Modular Label (ML) reflecting the Modular Architecture audited. This ML is valid for all Products implementing identical Modular Architecture.

Note: At the time of Request of Compliance submission, the Product Provider shall be registered with EMVCo.

A Modular Architecture Compliance is valid for 5 years.

2.2.2.2 Initial Product Submission

The following rules shall be applied to Products initially submitted to EMVCo for formal approval when the Product implements a Modular Architecture. These rules do not apply to debug testing that may be conducted directly between the Laboratory and Product Provider.

- All functional options, L1 Approved PCD and Kernels present must be identified on the ICS (including Contact if present). This reflects the Product configuration submitted for approval.
- A Valid Modular Label reflecting the Modular Architecture of the Product shall be identified on the ICS, or provided later during the Type Approval report review. In any case, this ML must be available before LoA issuance.
- The laboratory must validate and submit a copy of the completed ICS to EMVCo prior to performing type approval testing. EMVCo will review the statement for accuracy, archive the form for later comparison, and send an acknowledgement that the ICS is acceptable for testing.
- Approved Products are retained by the Laboratory for a period of 4 years as of the date of approval. The Product Provider is responsible for providing support as necessary to maintain the product in an operational state to accommodate any subsequent testing or analysis that may be deemed necessary by EMVCo.

Note: It is assumed that if contact is present in the Product, the Contact Type Approval has been granted previously or in parallel.

2.2.2.3 Subsequent Product Submission

The following rules shall be applied to Products actuating Modular Architecture submitted to EMVCo for subsequent formal approval:

- Subsequent Submission shall be based on the original hardware configuration (L1 approved PCD, FIT, ICR or Transparent Reader configuration and contact IFM).
- Modular Label shall be compatible with the Initial Submission and with the Modular Architecture submitted for approval.
- Any added Kernels, EMV or proprietary, must be identified on the ICS (if applicable). This reflects the Additional Product configuration submitted for approval. A new Letter of Approval will be issued related to this Product configuration.
- Modified Entry Point module or modified Kernels must be identified on the ICS (if applicable). This reflects the same Product configuration submitted for Approval. An
updated Letter of Approval will be issued related to this Product configuration update.

- The laboratory must validate and submit a copy of the completed ICS to EMVCo prior to performing type approval testing. EMVCo will review the statement for accuracy, archive the form for later comparison, and send an acknowledgement that the ICS is acceptable for testing.

- The Product Provider may decide to perform testing on the modified modules alone (Modified Entry Point module or modified or added Kernel modules), in which case, the Subsequent Submission ending date validity remains the same as the Initial Submission. The Product Provider can also decide to perform testing on the modified modules along with delta testing on the non-modified modules against the latest test plan, in which case, the Subsequent Submission starting date validity starts on the day of approval of the ICS submitted for Subsequent Submission. The below figures show examples of Subsequent Submission:

![Figure 8: Case where the added/changed module only is tested](image)
Figure 9: Case where all modules are retested
(Subsequent Submission with extended date)

Note: Kernels C-a, C-b or C-c of the figures refer to C-1 to C-7 Kernels only as examples.

• Approved Products are retained by the Laboratory for a period of 4 years as of the date of approval. The Product Provider is responsible for providing support as necessary to maintain the product in an operational state to accommodate any subsequent testing or analysis that may be deemed necessary by EMVCo.

2.2.2.4 Request for Modular Compliance

EMVCo assesses compliance of the Modular Architecture design of the Product against the EMV Type Approval Requirements for Modular Implementation ([TA Archi]). To determine compliance, Modular Architecture that will be implemented in the Product must undergo design Modular Architecture audit.

The Modular Label will be granted to the Modular Architecture, which can be implemented in any Product submitted for approval by the Product Provider.

After the Modular Label has been granted, it is valid as long as the following applies:

• The Modular Architecture design audited is the same as it was within the samples of the Product, which were tested and approved.
• The Compliance is not revoked by EMVCo.
• The ML has not expired.

2.2.2.5 Request of Approval

To determine compliance, reference implementations of the Product must undergo predefined tests in a specified test environment (Laboratory).

The Product submitted to Laboratory shall be submitted with a Contactless Level 1 (PCD)
complete with a valid LoA and must be representative of final deployment.

The Letter of Approval will be granted on the complete Product (including the hardware, the Modular Architecture and the contact LoA if applicable).

After the Letter of Approval has been granted, it is valid as long as the following applies:

- The approval is not revoked by EMVCo.
- The LoA is valid for the period of approval duration

Any change to the Product design may create a new Product, whether it occurs before, during, or after deployment. Type Approval of that new Product is not presumed.

2.2.2.6 Renewal Request for Approval

A Product approval is valid for 3 years. The starting date is the date of the initial approval or the date of the subsequent approval (date depends if the subsequent approval were performed with or without delta testing).

Every 3 years, EMVCo evaluates whether the product demonstrates sufficient compliance to the current EMV Contactless Specifications. If the evaluation results are positive then EMVCo grants an extension to the Product Letter of Approval.

The following rules will apply to Renewal Request:

- The Product' ongoing LoA is still valid at the time of renewal.
- The Level 1 LoA of all IFM(s) listed in the Product must be valid at the time of renewal. In case some IFM(s) LoA are no more valid, these concerned IFM will be removed from the renewed Contactless Product LoA.
- The contact L1, L2 LoAs are still valid at the time of renewal (if contact is present in the Product). In case some PCD(s) LoA are no more valid, these concerned PCD will be removed from the renewed Contactless Product LoA.
- All EMV Contactless Specifications are still valid (Book A, B and C-n)
- All EMV Contact Specifications are still valid (Book N1 N2 N3 N4) (if contact is present in the Product)

After the renewal date, Products not passing renewal testing nor applying for renewal testing will be removed from the approved list and their Letter of Approval will be considered revoked.

2.2.2.7 Laboratories testing procedure for ‘Optimized Process’

The following test sessions must be run for initial submission in this order:

Laboratories shall perform testing of Products under the following rules, for each initial testing session:

- Kernels C-1 to C-7 testing for all Kernels declared in the ICS and present in the Product submitted. The testing is performed using the independent test plans related to the kernels C-1 to C-7. Kernel testing covers two parts for each Kernel:
  - Kernel functional testing (one test plan per Kernel) using [TA C-n],
  - Performance testing (one test plan per Kernel) using [TA P].
• Multi-Kernel Independency testing using [TA M], where the independency test set applies. This set of tests ensures that there is no corruption between Kernels present in the Product.

• Modular testing using [TA M], where the modular test set applies. This set of tests ensures that Modular Architecture is correctly implemented in the Product.

**Note 1:** all steps above must be run on the final software module versions. If any failures occur in a Module (Kernel or Book A & B), then the whole set of tests of the concerned Module (Kernel or Book A & B) must be re-run until a successful completion is achieved. If the successful completion of a Kernel testing cannot be achieved, but the Book A & B and the other Kernel pass successfully the testing (included Modular, Independency and performance) without any change in the final software versions, then the LoA can be issued without the concerned Kernel.

**Note 2:** Checksum values of each module and sub modules; as well as untested modules, shall be retrieved from the Contactless Product submitted and checked by the Laboratory against value declared by the Product Provider. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product.

**Note 3:** If the modular testing fails during the initial submission the Product can still be approved, but it cannot go through ‘Optimized Process’ for subsequent approval, (no reference in the LoA to the ML).

**Note 4:** If testing can n

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**The following test sessions must be run for subsequent approval in this order:**

Laboratories shall perform testing of Products under the following rules, for each testing session:

• Book A & Book B (Entry Point) testing using [TA A&B] test plan only when the Entry Point module has been modified.

• Kernels C-1 to C-7 using [TA C-n] and using [TA P] for those added or modified Kernels declared in the ICS.

• Multi-Kernel Independency testing using [TA M], where the independency test set applies. This set of test ensures that there is no corruption between Kernels present in the Product.

• Modular testing using [TA M], where the modular test set applies. This set of tests ensures that Modular Architecture is correctly implemented in the Product.

**Note 1:** all steps above must be run on the final software module versions. If any failures occur in a Module (Kernel or Book A & B), then the whole set of tests of the concerned Module (Kernel or Book A & B) must be re-run until a successful completion is achieved. If the successful completion of a Kernel testing cannot be achieved, but the Book A & B and the other Kernel pass successfully the testing (included Modular, Independency and performance) without any change in the final software versions, then the LoA can be issued without the concerned Kernel.

**Note 2:** Checksum values of each module and sub modules; as well as untested modules, shall be retrieved form the Contactless Product submitted and checked by the Laboratory against value declared by the Product Provider. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product.

**The following test sessions must be run for Renewal approval:**
Laboratories shall perform renewal testing of Products under the following rules:

- Delta testing of each module present (Book A & Book B, kernels C-1 to C-7): performing the delta tests (used test plans vs latest test plans available).
- Regression testing of each module present (Book A & Book B, kernels C-1 to C-7): performing tests from the latest test plans available.
- Modular full testing.
- Independency full testing.
- If needed, renewal rules for the contact regression applies.
- Laboratory shall confirm that the Checksum(s) are identical with the previously approved Product.

**Note 1:** all steps above must be run on the final software module versions. If any failures occur in a Module (Kernel or Book A & B), then the whole set of tests of the concerned Module (Kernel or Book A & B) must be re-run until a successful completion is achieved.

**Note 2:** all steps above for renewal testing must be run on the already approved product.

**Note 3:** Checksum values of each modules and sub modules; as well as untested modules, shall be retrieved from the Contactless Product submitted and checked by the Laboratory against value declared by the Product Provider. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product.

**Transaction Type Testing:**

Section IV of the Contactless Product ICS, requests the transaction type(s) ‘supported and activated’ for each Kernel present in the Contactless Product.

When a transaction type is supported and activated at a kernel level then it is considered supported and activated at the product level and the related tests shall be executed.

Example: Product contains: C-1 which supports ‘Purchase’ and C-2 which supports and activates ‘Purchase’ and ‘Refund’:

- Book A & Book B (Entry Point) testing using [TA A&B] test plan performs all applicable tests with Purchase and Refund (eg: 2EA.002.02 applies)
- Kernel C-1 using [TA C-1] and using [TA P] performs all tests with Purchase (if tests contain this option).
- Kernel C-2 using [TA C-2] and using [TA P] performs all applicable tests
- Multi-Kernel Independency testing using [TA M] performs
  - For C-1 all tests with Purchase
  - For C-2 all tests with Purchase and all tests with Refund

**Note:** ‘Support and Activation’ of the transaction type implementation depends on each Kernel, for example for C-3 if the transaction type is supported it is automatically activated.

### 2.3 Contactless Type Approval Life Cycle Concept

The following sections identify the type approval life cycle which is a logical concept
regarding the design and key approval milestones of a Contactless Product.

2.3.1 Contactless Product Life Cycle and Type Approval Milestones

Type Approval shall be done on a sample that is representative of future production. Therefore, the Type Approval milestone shall occur at a particular moment in the Product Life cycle: (Figure 10).

![Figure 10: Life cycle of Contactless Product](image)

2.3.2 Product Design Phase

The Product is developed by the Product Provider or an entity directly related to the Product Provider. Most importantly, Product design and development must be in accordance with the EMV Contactless Specifications, as well as any other applicable specifications (e.g. government standards).

2.3.3 Product Debugging Phase

The Product design is checked and tested against all related specifications. EMVCo recommends that compliance testing against the EMV Contactless Specifications is conducted on the representative sample before proceeding to type approval, preferably with tools equivalent to those used for type approval tests.

The Product Provider must identify which options its Product design has incorporated from the EMV Contactless Specifications and gather the information to be submitted in the Type Approval process.

2.3.4 Product Approval Phase

EMVCo assesses compliance (see section 4.2.2.1 & 4.3.2.5) of the Product design against the EMV Contactless Specifications. To determine compliance, reference implementations of the Product must undergo predefined tests in a specified test environment (EMVCo Accredited Laboratory).

The Product submitted for approval shall be complete with a valid EMVCo Level 1 Letter of Approval and must be representative of final deployment.

In case of applying for ‘Optimized Process’, the product submitted for approval shall also
own a valid EMVCo Modular Label.

After the Letter of Approval has been granted, it is valid as long as the following applies:

- The approval is not revoked by EMVCo.
- The LoA is valid for the period of approval duration.

Any change to the Product creates a new Product, whether it occurs before, during, or after deployment. Type Approval of that new Product is not presumed.

**Subsequent Submission Approval**

At any time during the Product Approval Phase for 'Optimized Process', the Product Provider may decide to add or modify a software module such as a Kernel, when the Product complies with a Modular Architecture (see section 4.2.3.3). This will result in an additional approval called Subsequent Submission. Depending on the module modified or added, different predefined tests will be run for this Subsequent Submission, and will result in an update of the Letter of Approval.

**2.3.5 Product Approval Renewal Phase**

Prior to the renewal date, Product Providers may request a renewal by submitting the original approved product to EMVCo for Renewal testing (see sections 4.2.2.2. & 4.2.3.6). The purpose of this renewal testing is to ensure that products pass the most current EMVCo testing.

At the time of submission, the product submitted for approval shall be complete with valid EMVCo Level 1 Letter of Approval.

In case of applying for 'Optimized Process', the Product submitted for approval shall also own a valid Modular Label.
2.4 ICS Submission rules

2.4.1 ICS Submission

• The initial ICS submission to the EMVCo is free of charge.

• The ICS submitted must be the ICS in pdf format, capable of importing/exporting XML format and shall be digitally signed by the Product Provider and the Laboratory at the time of submission to EMVCo.

• The Laboratory supplies the signed copy of the vendor-supplied ICS to EMVCo for review prior to the start of the type approval testing process.

• EMVCo will review and approve the ICS by returning the ICS in pdf digitally signed and with the official ICS number.

• In case the ICS is incorrectly filled, decline fee applies to Laboratory.

2.4.2 ICS replacement

• One free ICS replacement is allowed during the ICS life cycle. Any subsequent ICS replacement requested will be charged to the Product Provider.

  • Same submission process applies as for initial ICS submission (Laboratory submits the changed ICS).

  • This applies to any change in the ICS after the official approval of the ICS by EMVCo.

  • After the start of the test session of the Product, ICS replacements (following the rules of the previous bullet) are only allowed for administrative information update (such as name of product) but not are not allowed for technical information update.

  • Laboratory shall ensure that any ICS change requested is not made to hide a bug in the product (such as deactivation a function because this function is not working properly).

  • ICS replacement is no more allowed after Test Report submission to EMVCo.

Note: ICS decline process remains and any error reported by EMVCo will be charged to the Laboratory (as Laboratory is responsible of reviewing the ICS provided by the Product Provider). ICS decline process applies to the initial ICS submission and also to any other ICS replacement (charged or not charged to the Product Provider).
2.5 EMVCo type approval fee structure

2.5.1 Fees structure for ‘Standard Process’
The following fee structure applies for ‘Standard Process’:

- Submission
- ICS Replacement (starting at 2nd Replacement)
- Product renewal
- Declined ICS/Report
- LoA reissuance

2.5.2 Fees structure for ‘Optimized Process’
The following fee structure applies for ‘Optimized Process’:

- Modular Label
- Initial submission
- Subsequent submission
- Subsequent submission with extended date
- ICS Replacement (starting at 2nd Replacement)
- Derivative Product submission:
  - Product renewal
  - Declined ICS/Report
  - LoA reissuance

Note: The amount of each fees are published in Terminal Type Approval Bulletin 185.
3 Roles & Responsibilities

The following sections define the roles and responsibilities of the various participants in the type approval process.

3.1 EMVCo

EMVCo defines type approval contactless requirements and evaluates operational results. EMVCo provides the following services:

- Defines the Administrative Process.
- Operates the Approval Process.
- Defines mandatory auditor qualification requirements.
- Qualifies companies that perform audits to establish Laboratory accreditation.
- Qualifies companies that perform audits to establish Modular Architecture compliance.
- Defines Laboratory accreditation requirements.
- Evaluates Laboratory audit results and determines if the EMVCo accreditation should be granted to a Laboratory.
- Defines Tool Qualification Process.
- Qualifies Test Tool and maintains a list of Qualified Test Tools on the EMVCo website.
- Coordinates with the Payment Systems for the Kernels C-n testing.
- Manages Laboratory appeals process and resolves accreditation disputes.
- Manages Product Provider’s appeals process and resolves Modular Architecture compliance disputes.
- Defines appropriate test cases to test compliance with EMVCo Contactless Specifications.
- Defines procedures used to perform testing, submits test results for evaluation, and communicates evaluation results.
- Defines the test tools and evaluation criteria thereof.
- Evaluates Modular Architecture audit results and determines if the EMVCo compliance of that architecture should be granted.
- Evaluates Product approval test results to determine whether approval should be granted.
- Evaluates Product renewal tests results to determine whether a renewal should be granted.
- Notifies appropriate EMVCo working group of warranted specification corrections, clarifications, and enhancements where appropriate.
- Evaluates terminal and card failure complaints to determine if type approval revocation for a particular Product is appropriate.
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Roles & Responsibilities

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• Provides result response to Product Provider’s type approval test result evaluation request.
• Maintains and publishes (via EMVCo web-site) a list of Products that have received EMVCo type approval notification.
• Issue the Letter of Approval.
• Issue the Modular Label.

3.2 EMVCo Type Approval Secretariat (CATA)

The EMVCo Terminal Type Approval Secretariat (CATA Secretariat) is responsible for managing the EMVCo Type Approval contactless process. This includes the administrative functions associated with Product Provider’s registration, completion of contracts, processing approval requests and fees, issuing letters of approval letters of compliance or decline, etc. The role also includes communicating type approval status to third parties and the maintenance of a database that provides the following:

• Coordinate with the Payment Systems.
• Qualified Auditors.
• Accredited Laboratories.
• Qualified EMVCo Tools.
• Type approval and compliance requirements and test cases.
• Approved EMV contact & contactless Products.

3.3 Auditors

Two types of auditors are required for contactless process:

• Laboratory Auditor: The Laboratory Auditor is in charge of auditing the Laboratory for accreditation purpose.
• Compliance Auditor: The Compliance Auditor is in charge of auditing the Modular Architecture provided by the Product Provider, checking the compliance of the Product Modular Architecture with EMVCo Modular Requirements (see document [TA Arch]). He also provides the signed audit report to EMVCo when approved by the Product Provider.

3.4 EMVCo Accredited Laboratories

The Laboratory is a test facility accredited by EMVCo to conduct testing of the Product or part of the Product in accordance with the EMVCo type approval requirements and test cases. It shall also:

• Verify the Implementation Conformance Statement provided by the Product Provider
- Extract the set of test case depending on:
  - The version of Entry Point,
  - The version of each Kernel,
  - If the Product Provider wants to proceed to ‘Standard Process’ or ‘Optimized Process’,
  - If it is an initial or subsequent submission (case of ‘Optimized Process’ only),
  - If it is a renewal approval.
- Perform the test session
  - Checksum values of each module and sub modules; as well as untested modules shall be retrieved form the Contactless Product submitted and checked by the Laboratory against value declared by the Product Provider.
- Analyze the test results.
- Communicate the results to the Product Provider.
- Send to EMVCo the result of the test session(s) after Product Provider approval.
- Eventually send the Request for Approval on behalf of the Product Provider.

3.5 Product Provider

3.5.1 Modular Compliance Request

The Product Provider shall
- Sign appropriate contracts.
- Select one Auditor to perform the Audit.
- Submit to the Auditor the Modular Architecture documents for review.
- Verify and approve the audit report provided by the Auditor.
- Fill out the Request for Compliance Form.
- Submit to EMVCo the Request for Compliance form.

3.5.2 Type Approval Request

The Product Provider shall provide the Product to be tested by the Laboratory:
- Sign appropriate contracts.
- Fill out the Request for Approval and Implementation Conformance Statement Forms.
- Submit to the Laboratory the ICS for review.
- Submit to EMVCo the Request for Approval form (or the Laboratory can submit on behalf of the Product Provider).
- Select one or several Laboratories to run the tests session(s).
- Submits the final Product to the Laboratories for testing.
- Verify and approve the test results provided by the Laboratories.
4 Type Approval Procedures

The type approval procedure applied by Product Providers, Laboratories, auditors and EMVCo includes the following:

- Product provider obtains registration information from the EMVCo web site or from an EMVCo accredited laboratory
- Product provider submits a completed registration template to the EMVCo Type Approval Secretariat
- Product provider obtains the Level 2 EMVCo/vendor contract from EMVCo, the EMVCo web site or from an EMVCo accredited laboratory
- Product Providers conclude the contract with EMVCo. This contract covers Product approval and Modular Architecture Compliance (if needed). A contract between EMVCo and the Product Providers must be signed before test results are submitted to EMVCo for evaluation and potential type approval.
- In case of ‘Optimized Process’ selection by Product Providers:
  - Product Providers select a Compliance Auditor from the qualified Auditor list published on the EMVCo web site,
  - Product Providers conclude a contract with the qualified Auditor in respect of the Modular Architecture to be audited,
  - Product Provider submits relevant documentation to the Auditor,
  - Auditor performs the audit,
  - Product Providers validate the audit results,
  - Product Providers submit a completed Request for Compliance form to EMVCo. Based on the Request For Compliance form EMVCo will provide Product Provider with an invoice,
  - Based on the received invoice the Product Provider shall settle the administrative fees with EMVCo,
  - Product Providers submit the audit report results to the EMVCo CATA Secretariat,
  - If the fee payment is confirmed by EMVCo Financial Secretariat, analysis of the audit report results by EMVCo and, if appropriate compliance notification.
- Product Providers select one or several accredited Laboratories from the list of accredited Laboratories published on the EMVCo web site. The Laboratory performing Book A & B testing, Independency testing and Modular testing (if ‘Optimized Process’) is referenced as the Main Laboratory.
- Product Providers conclude a contract with the Laboratories selected in respect of the Product to be tested.
- Product Providers and selected Laboratories shall fill out the ICS; one ICS for the overall Product (called Contactless Product ICS) and one ICS for each Kernel C-n present. The Contactless Product ICS is managed by the Main Laboratory and it is the responsibility to share this ICS (after EMVCo Approval of the ICS) with the other selected Laboratories (if any).
- The Laboratory reviews for accuracy the ICS received from the Product Provider and then archived for later comparison. Laboratories submit a validated copy of the
completed ICS to EMVCo prior performing testing. This ICS must be in pdf format, capable of importing/exporting XML format and shall be digitally signed by the Application Provider and by the Laboratory (both signatures on the same ICS submitted) as paper copy or scanned copy are no more accepted.

- The EMVCo CATA Secretariat will respond with a confirmation that all the submitted ICSs are acceptable for testing to the Main Laboratory.
  - If the submitted ICS is acceptable the Secretariat responds back to the Laboratory and return at the same time the approved ICS in .pdf format digitally signed
  - If the submitted ICS is unacceptable the Secretariat inform the Laboratory and apply the “Decline fees” (see Bulletin)
- All Laboratories perform appropriate testing of the submitted Product against the published test requirements and test cases.
- On Product Provider’s request, the Laboratories submit the ICSs and test results (with checksum of the modules tested) to the EMVCo CATA Secretariat.
- Product Providers submit a completed Request for Approval form to EMVCo. Based on the RFA form EMVCo will provide Product Provider with an invoice.
- Based on the received invoice the Product Provider shall settle the administrative fees with EMVCo.
- If the fee payment is confirmed by EMVCo Financial Secretariat, analysis of the ICS and test results by EMVCo will start and, if appropriate, approval notified.
- Type approved contactless Products are posted on the EMVCo web site after approval notification.
- Approved products are retained by the Laboratory for a period of 4 years as of the date of approval. The Product Provider is responsible for providing support as necessary to maintain the Product in an operational state to accommodate any subsequent testing or analysis that may be deemed necessary by EMVCo.

Figure 11 below shows the diagram of Type Approval Processes
Figure 11: Contactless Product Type Approval Procedure

Registration
- EMVCo Registration
- Contract for Contactless Product TTA

Product Provider (PRP) Decision
- Modular Architecture?
  - Yes
  - ML already obtained?
    - Yes
    - No
    - Auditor Choice
  - No
- Compliance Audit Process
  - PRP / Auditor Contract
  - Modular Architecture design documents submission
  - Audit of documents and on site
  - Audit report issuance

Product Provider Audit Review
- Audit Report Review
  - PRP Decision?
    - Yes
    - Submit to EMVCo
    - Send report to EMVCo
    - EMVCo ML fee payment
    - Request For Compliance
  - No
- EMVCo Compliance Audit Review
  - Audit Report Review
    - Results Ok?
      - Yes
      - Modular Label issuance
      - Compliance Declined
      - ‘Optimized Process’
    - No

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4.1 Registration

Registration provides the Product Provider with entry to the EMVCo approval process in order to make the Product Provider aware of all formalities that need to be finalized prior to submitting their final test report to EMVCo for approval.

The registration process is composed of the following steps:

- The Product Provider submits a registration request to the EMVCo CATA Secretariat.
- The EMVCo CATA Secretariat will send to the Product Provider a response with the following:
  - Registration reference number,
  - Contract between EMVCo and Product Provider,
  - Appropriate contact information,
  - Administrative fees charged for Type Approval and payment instructions,

4.2 Contract with EMVCo

The Product Provider must complete and sign the EMVCo defined contract before final test results or Modular Compliance are submitted to EMVCo for evaluation and possible approval. This contract governs the relationship between EMVCo and the Product Provider and includes the Product Provider’s acceptance of all specifications, procedures, terms and conditions governing EMVCo Contactless Product Type Approval and Modular Architecture Compliance.

The contract is standard for all Product Providers to ensure consistent requirements for all participants. Contract customization for individual Product Providers is not possible.

4.3 Request for Compliance

4.3.1 Product Provider and Auditors

This procedure only applies when the Product Provider wants to submit products with Modular Architecture to the ‘Optimized Process’.

- The Product Provider selects an qualified Compliance Auditor from the EMVCo website
- Once the Compliance Auditor is selected, the Product Provider and the Auditor execute a contract defining the individual rights and obligations of the contracting parties. The provisions of Product Provider/Auditor contract are up to the contracting entities and entirely out of EMVCo’s scope. Any fees payable to the Auditor in respect of the audit to be performed are solely at the discretion of the Auditor.
- The Product Provider submits material to the Auditor in order for him to perform the audit for Modular Architecture Compliance.
- The Auditor performs the audit for Modular Architecture Compliance based on the
documentation.

• Auditor submits audit report to the Product Provider and both sign the final audit report.
• The Product Provider submits the final signed audit report to EMVCo for review and Compliance approval.

4.3.2 Product Provider Preparation for Compliance Request

The Product Provider determines whether compliance audit report resulting from Auditor will be submitted to EMVCo for evaluation. Submitting compliance audit report to EMVCo for evaluation indicates Product Provider acceptance that the audit report is a true representation of the Modular Software Architecture that will be implemented in the Products.

4.3.3 Product Provider Request for Compliance

The request for review will comprise:

• Letter requesting Compliance (RFC form).
• The complete and unchanged Audit reports of the Modular software Architecture as received from the Auditor.
• EMVCo invoice settled.
• Any additional supporting documentation the Product Provider believes is appropriate.

4.3.4 EMVCo Approval

Upon receiving the request, EMVCo will:

• Review the submitted audit reports and determine if Modular Label should be granted for the Modular Architecture
• Notify the Product Provider of Compliance approval or denial for the Modular Architecture.
• Issue Modular Label, if appropriate.
• Provide notification of EMV Modular Architecture compliance.

Modular Label identifies the Modular Architectures with the following information:

• The Product Provider Modular Architecture references.

4.4 Request For Approval

4.4.1 Product Provider and Laboratory Operations

The following operations are performed by the Product Provider and the Laboratory as they relate to the type approval procedure:

• The Product Provider is free to select any EMVCo accredited Laboratories on purpose of achieving EMVCo Contactless type approval. A list of accredited Laboratories is published on the EMVCo web site. Once Laboratories have been
selected, the Product Provider and Laboratories sign a contract defining the rights and obligations of the contracting parties. The provisions of Product Provider/Laboratory contract are up to the contracting entities and entirely out of EMVCo’s scope. Any fees payable to the Laboratory in respect of the tests to be performed are solely at the discretion of the Laboratory.

- In case that the Product Provider has selected multiple Laboratories, the Laboratory performing Book A & B testing, independency testing and Modular testing (for ‘Optimized Process’ only) is defined as the Main Laboratory for EMVCo.

- Product Provider sends the appropriate Implementation Conformance Statement (ICS) to the chosen Laboratory(ies) for each Product that it submits for testing. The ICS format and content requirements are determined by EMVCo.

- Each Laboratory validates the Product Provider's-supplied ICSs and supplies a copy to the EMVCo CATA Secretariat for approval prior to the start of the type approval testing process.

- The Laboratory(ies) tests the Products in accordance with EMVCo test procedures. Two cases of procedure can be considered according to below section 6.4.1 and 6.4.2.

- The Product Provider prepares the Request for Approval form and submits it to the EMVCo CATA Secretariat. EMVCo then issues the invoice to the Product Provider.

- Product Provider submits payment to EMVCo based on the received invoice.

- The Laboratory(ies) sends the final test report to the Product Provider being the owner of the test results. The Laboratory(ies) must advise EMVCo of any failures that have been encountered during testing.

- The Laboratory(ies) submits an original copy of the test results report to the EMVCo CATA Secretariat, and ensures that the Product Provider has already submitted his completed Request For Approval form.

4.4.1.1 Laboratory test procedure for ‘Standard Process’

The Laboratories must perform the following testing procedure when the test session is performed in the ‘Standard Process’:

For the Main Laboratory:

Before the Test Session:

- Request the Other Laboratory(ies) (if any) to provide the Kernels C-1 to C-7 ICSs they are in charge of. The ICSs provided by the Other Laboratory(ies) to the Main Laboratory shall have been previously approved by EMVCo.

- When all ICSs of the submitted Contactless Product have been received by the Main Laboratory, the Main Laboratory sends all ICSs (Contactless ICS and all Kernels ICSs) to each Other Laboratory(ies) involved in this submission.

During the Test Session:

- Kernels C-1 to C-7 testing using the [TA C-n] test plans and [TA P] Test plans: Main Lab shall test one or several Kernels declared in the ICS and present in the Product
submitted (Main Lab shall test at least test one of Kernel present).

- Multi-Kernel Independency testing using [TA M], where independency test set of all C Kernel(s) present in Product applies (no modular testing), with the following process:
  o Verify Independency Tests Pass Criteria only for the C kernel(s) the Main Laboratory is performing test as described in previous paragraph.
  o Verify that Independency Tests pass correctly (transactions accepted) for C kernel(s) that the Main Laboratory is not performing kernel test (with [TA C-n]).

- Testing must be done with the final product. This means Laboratories must verify the checksum. Checksum values shall be retrieved from the Contactless Product submitted and checked by the Laboratory against values provided by the Product Provider in the ICS. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product.

For the other Laboratory (if any):

Before the Test Session:

- On request from the Main Laboratory, provide the Kernels C-1 to C-7 ICSs it is in charge of. The ICSs provided to the Main Laboratory shall have been previously approved by EMVCo.
- Receive back from the Main Laboratory all ICSs of the submitted Contactless Product.

During the Test Session:

- Kernels C-1 to C-7 testing using the [TA C-n] test plans and [TA P] Test plans: Other Lab(s) shall test one or several Kernels declared in the ICS and present in the Product submitted but not tested by the Main Laboratory.
- Multi-Kernel Independency testing using [TA M], where independency test set of all C Kernel(s) present in Product applies (no modular testing), with the following process:
  o Verify Independency Tests Pass Criteria only for the C kernel(s) the Laboratory is performing test as described in previous paragraph.
  o Verify that Independency Tests pass correctly (transactions accepted) for C kernel(s) that the laboratory is not performing test (with [TA C-n]).
- Testing must be done with the final product. This means Laboratories must verify the checksum. Checksum values shall be retrieved from the Contactless Product submitted and checked by the Laboratory against values provided by the Product Provider in the ICS. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product.

**Note:** A Laboratory running a test session for a kernel C-n using related [TA C-n] test plan must run in the same session the C-n related performance tests from [TA-P] test plan.

**4.4.1.2 Laboratory test procedure for ‘Optimized Process’ and Initial Submission**

The Laboratories must perform the following testing procedure when the test session is performed in the ‘Optimized Process’ with an Initial product Submission:
For the Main Laboratory:

Before the Test Session:

- Request the Other Laboratory(ies) (if any) to provide the Kernels C-1 to C-7 ICSs they are in charge of. The ICSs provided by the Other Laboratory(ies) to the Main Laboratory shall have been previously approved by EMVCo.
- When all ICSs of the submitted Contactless Product have been received by the Main Laboratory, the Main Laboratory sends all ICSs (Contactless ICS and all Kernels ICSs) to each Other Laboratory(ies) involved in this submission.

In the Test Session:

- Kernels C-1 to C-7 testing using the [TA C-n] test plans and [TA P] Test plans: Main Lab shall test one or several Kernels declared in the ICS and present in the Product submitted (Main Lab shall test at least test one of Kernel present).
- Multi-Kernel Independency testing using [TA M], where independency test set of all C Kernel(s) present in Product applies (no modular testing), with the following process:
  - Verify Independency Tests Pass Criteria only for the C kernel(s) the Main Laboratory is performing test as described in previous paragraph.
  - Verify that Independency Tests pass correctly (transactions accepted) for C kernel(s) that the Main Laboratory is not performing kernel test (with [TA C-n]).
- Modular testing using [TA M], where the modular test set applies.
- Testing must be done with the final product. This means Laboratories must verify the checksum of each module (Entry Point, Kernels C-n present in the product), even for the module(s) not tested. Checksum values of each module and software module shall be retrieved from the Contactless Product submitted and checked by the Laboratory against values provided by the Product Provider in the ICS. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product

For the Other Laboratory (if any):

Before the Test Session:

- On request from the Main Laboratory, provide the Kernels C-1 to C-7 ICSs it is in charge of. The ICSs provided to the Main Laboratory shall have been previously approved by EMVCo.
- Receive back from the Main Laboratory all ICSs of the submitted Contactless Product.

During the Test Session:

- Kernels C-1 to C-7 testing using the [TA C-n] test plans and [TA P] Test plans: Other Lab(s) shall test one or several Kernels declared in the ICS and present in the Product submitted but not tested by the Main Laboratory.
Multi-Kernel Independency testing using [TA M], where independency test set of all C Kernel(s) present in Product applies (no modular testing), with the following process:

- Verify Independency Tests Pass Criteria only for the C kernel(s) the Laboratory is performing test as described in previous paragraph.
- Verify that Independency Tests pass correctly (transactions accepted) for C kernel(s) that the laboratory is not performing test (with [TA C-n]).

Testing must be done with the final product. This means Laboratories must verify the checksum of each module (Entry Point, Kernels C-n present in the product), even for the module(s) not tested. Checksum values of each module and software module shall be retrieved from the Contactless Product submitted and checked by the Laboratory against value provided by the Product Provider in the ICS. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product.

**Note:** A Laboratory running a test session for a Kernel C-n using related [TA C-n] test plan must run in the same session the C-n related performance tests from [TA-P] test plan.

### 4.4.1.3 Contracts between Laboratories and Product Provider

The provisions of the contract entered between Laboratories and Product Providers are entirely outside of EMVCo’s scope. However, the likely areas for inclusion are mentioned below for information purposes only:

- Any Laboratory requirements needed for testing including any software application required interfacing with the Laboratory test equipment, e.g., host emulator, etc.
- Reference to the contract between the Product Provider and EMVCo.
- Agreement of mutual cooperation in providing information and assistance where needed.
- Lead-time for the execution of the type approval tests.
- The number of samples available for testing (At least three shall be provided).
- Arrangement for the preparation and delivery of samples.
- Right to keep all samples for the duration of the test procedure.
- Right to keep all approved samples for a period of the LoA validity plus 1 years. Note: samples are retained for subsequent testing purposes and the Product Provider must provide the necessary support to the Laboratory to ensure the Product remains fully functional.
- Recognition that no infringement on the independence or impartiality of the Laboratory will be allowed during or after testing.
- Agreement on the boundaries of use of the test report.
- Provisions for conflict resolution.

### 4.4.1.4 Type Approval Test Report

The results of the Product type approval tests are combined in: one signed test report per Kernel and one signed report for Book A & B, Independency and Modular testing, that are submitted to EMVCo in electronic format by each Laboratory for review. The test reports must include the following information:

- Identification of the Laboratory.
• Identification of Product Provider.
• Identification of Product.
• Identification of each Kernel module tested.
• Identification of Book A & B testing, Independency testing, Modular testing (if applicable).
• Product Provider signed Implementation Conformance Statement identifying Product that has been tested.
• For each module tested (kernels, Entry Point & Book A) a separate test report shall be provided with the below information:
  o EMVCo Contactless Specification/test case version used for test,
  o Identification of all Laboratory test equipments and software versions used during the tests,
  o Dates tests were performed,
  o The test case execution results in the test reports for each test case:
    ➢ EMVCo defined test case number and title,
    ➢ Pass, Fail, or Not Applicable test result,
    ➢ For Not Applicable designated test case results, an explanation justifying this designation,
    ➢ Additional Laboratory comments, if appropriate,
  o A detailed description of any exception test(s) performed or equipment utilized and a description of related test results,
  o A detailed description of the Product Provider’s modifications that may be required for the purpose of successfully executing the EMVCo test cases.

4.4.2 Product Provider Preparation for Approval Request

The Product Provider determines whether test results resulting from Laboratory testing will be submitted to EMVCo for evaluation. Submitting test results to EMVCo for evaluation indicates Product Provider acceptance that the test results are a true representation of the Product. Test results may be submitted to EMVCo for evaluation up to 90 days from the date they are generated by the Laboratory. **Test results older than 90 days are expired and cannot be submitted for evaluation.** Product re-testing is required to create a current test report if the validity period is exceeded and EMVCo evaluation is desired.

The Product Provider must ensure that the Product under test associated with test results submitted to EMVCo for evaluation remains unaltered and accessible in a timely manner during the evaluation process. It is recommended that the Product under test remain in the possession of the Laboratory until EMVCo has approved or declined the request for approval.

4.4.3 Product Provider Request for Approval

The request for review will comprise:

• Letter requesting approval (RFA form).
• The complete and unchanged test reports for all modules as received from the Laboratory(ies).
• EMVCo invoice settled.
• Any additional supporting documentation the Product Provider believes is appropriate.

4.4.4 EMVCo Approval

Upon receiving the request, EMVCo will:
• Review the submitted test reports and determine if type approval should be granted for the Product
• Notify the Product Provider of type approval or denial for the Product.
• Issue Letter of Approval, if appropriate.
• Provide notification of EMV Product type approval.

Contactless Product LoA identifies the approved product with the following information:
• The approved Kernel names, version and checksum(s).
• The approved Level 1 PCD of the product.
• The hardware configuration of the product (FIT, ICR or Transparent Reader Combination).
• The approved Level 1 Contact IFM (if present).
• The approved Level 2 Contact Kernel (if present).
• The EMV Contactless Specifications version against which it was tested.
• The Test Plan(s) version against which it was tested.
• The list of approval numbers for the different tested features.
• The renewal date.

Note: Checksums identified on the LoA are the Kernel(s) and Entry Point Checksums only. Software module will not be identified on the LoA.

Note 2: For Optimised Process only: If the successful completion of a Kernel testing is not achieved, but the Book A & B and the other Kernel pass successfully the testing (included Modular, Independency and performance) without any change in the final software versions, then the LoA can be issued without the concerned Kernel.

4.4.4.1 Intermediate Letter of Approval

In given situations the review of Test report from specific kernel(s) may take longer then expected and could slow done the issuance of the Letter of Approval.

In such cases, EMVCo will inform the Product Provider which can decide to issue an intermediate Letter of Approval covering:
• The already approved Kernel names, version and checksum(s).
• The approved Level 1 PCD of the product.
• The hardware configuration of the product (FIT, ICR or Transparent Reader Combination).
• The approved Level 1 Contact IFM (if present).
• The approved Level 2 Contact Kernel (if present).
• The EMV Contactless Specifications version against which it was tested.
• The Test Plan(s) version against which it was tested.
• The list of approval numbers for the different tested features.
• The renewal date.

Final Letter of Approval, covering all kernels of the submitted Contactless Product, will be issued automatically by EMVCo after the review of the test reports of the concerned kernel(s).

4.4.5 ‘Optimized Process’ and Subsequent Submission: Laboratory Testing Procedure

4.4.5.1 Kernel Addition, Change on Kernel or on Entry Point

The Laboratories must perform the following testing procedure when the test session is performed with the ‘Optimized Process’ during a Subsequent Submission of the Product.

This procedure applies to all Subsequent Submissions: for Kernel addition or any change in any of the module present (EP or Kernel):

• Book A & Book B testing using [TA A&B] test plan if a change has been made in this module.

• Kernels C-1 to C-7 testing only for Kernels declared in the ICS as ‘changed’ or ‘added’ using the [TA C-n] test plans and [TA P] Test plans.

Additionally the below test plans must always be run for Subsequent Submission:

• Multi-Kernel Independency testing using [TA M], where independency test set of all C Kernel(s) present in Product applies (no modular testing), with the following process:
  o Verify Independency Tests Pass Criteria only for the C kernel(s) the Laboratory is performing test as described in previous paragraph.
  o Verify that Independency Tests pass correctly (transactions accepted) for C kernel(s) that the laboratory is not performing test (with [TA C-n]).

• Modular testing using [TA M], where the modular test set applies.

Testing must be done with the final Product. This means Laboratories must verify the Checksum of each module (Entry Point, Kernels C-n present in the Product), even for the module(s) not tested. Checksum values of each module and software module shall be retrieved from the Contactless Product submitted and checked by the Laboratory against values provided by the Product Provider in the ICS. It is not allowed to change any Checksum value during the type approval, as the product submitted shall be the final Product.

Note: All modules shall be tested with the latest version of the test plans.

The below example shows the approval duration of a Product when performing a Subsequent Submission (where Kernel C-a, C-b, etc, refer to EMVCo Kernel C-1 to C-7 only):

Figure 12: Example of Subsequent Submission of a Product
4.4.5.2 Delta testing on Kernel

When a Product Provider, during Subsequent Submission and ‘Optimized Process’, wants to take opportunity in extending the validity date of the submitted Product, delta testing on the non-modified software modules can be run on top of the tests ran according to the previous section.

The Laboratories must then perform the following delta-testing on the top of the test as described in section 6.8.1, if requested by the Product Provider:

For each unchanged module of the product (Kernels and/or Entry Point):

- Perform delta testing with the delta test between test plan used in the Initial Submission and the latest version of each test plans,
- This concerns [TA C-n], [TA P], [TA A&B] test plan,

The below example shows the approval duration of a Product when performing a Subsequent Submission with delta testing (where Kernel C-a, C-b, etc, refer to EMVCo Kernel C-1 to C-7 only):

Figure 13: Example of Subsequent Submission of a Product with delta testing
4.4.5.3 Errata test lists

For each [TA C-n] and [Book A & B] test plan, an errata list is maintained by EMVCo between the versions of test plans.

This list summarizes the mandatory tests to run in the latest test plan version whatever is the Kernel(s) software version loaded in the Product.

The below figure shows an example of ‘Optimized Process’ with Initial Submission and Subsequent Submission with additional Kernel for the same product:
Figure 14: Example of Tests for Subsequent Submission of a Product

4.4.6 ICS Submission rules
For all processes the following ICS submission rules applies:

4.4.6.1 ICS Submission

- The initial ICS submission to the EMVCo is free of charge.
- The ICS submitted must be the ICS in pdf format, capable of importing/exporting XML format and shall be digitally signed by the Product Provider and the Laboratory at the time of submission to EMVCo.
- The laboratory supplies the signed copy of the vendor-supplied ICS to EMVCo for review prior to the start of the type approval testing process.
- EMVCo will review and approve the ICS by returning the ICS in pdf digitally signed and with the official ICS number.
- In case the ICS is incorrectly filled, decline fee applies to Laboratory.

4.4.6.2 ICS replacement

- One free ICS replacement (per ICS type) is allowed during the ICS life cycle. ICS replacement fee will be charged (to the Product Provider) for any subsequent ICS replacement request.
  - Same submission process applies as for initial ICS submission (Laboratory submits the changed ICS).
  - This applies to any change in the ICS after the official approval of the ICS by EMVCo.
- After the start of the test session of the Product, ICS replacements (following the rules of the previous bullet) are only allowed for administrative information update (such as name of product) but not are not allowed for technical information update.
- Laboratory shall ensure that any ICS change requested is not made to hide a bug in the product (such as deactivation a function because this function is not working properly).
- ICS replacement is no more allowed after Test Report submission to EMVCo

Note: ICS decline process remains and any error reported by EMVCo will be charged to the
Laboratory (as Laboratory is responsible of reviewing the ICS provided by the Product Provider). ICS decline process applies to the initial ICS submission and also to any other ICS replacement (charged or not charged to the Product Provider).

### 4.5 Type Approval Renewal Process

#### 4.5.1 Basic Policy

##### 4.5.1.1 Renewal

At the end of the validity period of the Product, EMVCo evaluates whether the Product demonstrates sufficient conformance to the current EMV Contactless Specifications. If the evaluation result is positive then EMVCo gives an extension to the Product Letter of Approval.

The following rules shall apply to Renewal Request:

- The Product on going LoA is still valid at the time of renewal.
- The Level 1 LoAs must be valid at the time of renewal.
- The contact L1, L2 LoAs are still valid at the time of renewal (if contact is present in the Product).
- All EMV Contactless Specifications are still valid (Book A, B and C-n).
- All EMV Contact Specifications are still valid (Book N1 N2 N3 N4) (if contact is present in the Product).

For Contactless Product with Derivative Products, the following rules also apply:

- In case some IFM(s) LoA are no more valid, these concerned IFM(s) will be removed from the renewed Contactless Product LoA.
- In case some PCD(s) LoA are no more valid (if contact is present in the Product), these concerned PCD(s) will be removed from the renewed Contactless Product LoA.

Six months before the renewal date of their Product, EMVCo will send a notification letter to the Product Provider. After the reception of this letter and prior to the renewal date, Product Provider may request their renewal by submitting the originally approved product to EMVCo for renewal testing

**Note:** Product Providers are not allowed to apply for renewal testing before receiving the notification letter

**Renewal Test Plan**

6 months before the renewal date:

- The objective of the renewal testing is to ensure these Products pass the most current EMVCo testing. By passing the renewal test, the Product will receive an extension to the Letter of Approval. If the products fail to pass the renewal testing, they will be removed from the Product list and their Letter of Approval will be considered revoked. If the existing samples are no longer functional at the Laboratory, the Product Provider may submit the original sample to a Laboratory for renewal testing.
• The set of the renewal tests will be generated based on the newly added or modified test cases since the older test plans that kernels were tested against and the most current test plans at the time of testing plus regression testing.

• The most current test plan reference is the version available at the time of the Type Approval test session.

Note: if the existing samples are no longer functional at the Laboratory and the devices are provided by the Product Provider, in case of Standard Process, a full test session is required.

4.5.2 Laboratories for renewal testing

The Product Provider may decide to have a different Laboratory to perform renewal testing. The Product Provider must make the necessary arrangements to have the originally approved Product transported between Laboratories. The Product Provider is responsible for incurring the costs associated with this transfer.

4.5.3 Samples Submission

Renewal testing must be performed on Products already physically present at a Laboratory. If the Product is no longer present or is otherwise inoperable, EMVCo may accept a replacement Product from the Product Provider for testing provided they have signed a disclaimer stating that the replacement Product is identical in all respects to the Product originally supplied to a Laboratory for testing (without modification, same checksum(s), ..). For this reason, it is essential that Product Providers retain an exact and unaltered copy of the Product originally sent to the Laboratory during the initial testing phase.

4.5.4 ICS Submission

If the product does not support mandatory features described in the latest version of the ICS, the Product is not eligible for renewal.

ICS submitted for renewal testing must be based on the latest version available at the time of testing.
5  Test Version and Specification Change

The following sections identify the process managing type approval test changes when the specification or test cases change.

5.1 Test Changes without Specification Update and Application note

EMVCo reserves the right to change type approval tests at any time in order to increase the accuracy and integrity of the tests versus the EMV Specification, or for any other reasons.

Figure 15: Example of the timing for test changes

<table>
<thead>
<tr>
<th>TTA Tests Version n Applicable</th>
<th>No TTA Tests Version n Beyond this Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release of TTA Tests Version n+1</td>
<td>Development and Installation of New Tests</td>
</tr>
<tr>
<td>TTA Tests Version n+1 Applicable</td>
<td>Start Running New Tests</td>
</tr>
</tbody>
</table>

EMVCo will inform all participants of the new tests and fix the date(s) for activation of the new tests and deactivation of the old. EMVCo may determine a time period during which either the old or new test version may be used in the type approval process (see figure 15). However, EMVCo shall not be under any obligation to permit a phase-out of old tests.

5.2 Test Changes due to Specification Update and Application Note

After a change in the EMV Specifications, EMVCo will decide:

- If and when the type approval tests must be changed to accommodate the new specifications
- When to introduce the new type approval test version
- When to stop testing and renewal with the previous type approval test version

EMVCo will inform all participants of the new tests and the date(s) of the activation of the new test version and deactivation of the old test version.
5.3 Testing Applicability

All Products will be tested to the current version of the EMV test cases. Test case applicability is defined by the date determined by EMVCo. At which time all new Products and Subsequent Submissions submitted on or after this date will be tested to current test plan. Previous versions of the test plan may not be used and EMVCo will reject any testing performed to an old version of a test plan after the applicable date.
6 Product Changes

EMVCo recognizes that from time to time minor changes may occur without affecting Product compliance to the EMV Specification. However, EMVCo considers a major modification to be a change to the Product that affects the compliance of the Product to the requirements of the EMV Specification. A Product that undergoes a major modification shall be considered as a changed Product and therefore type approval is required according to the present document.

A major change to a Product may generate a different behavior of the Product with respect to the EMV Specification and the Product Provider’s ICS. In such cases, the modified Product shall be considered as a new Product (non Modular Implementation) or as a changed Product (Modular Implementation) and new testing and evaluation is required to extend type approval to this Product. The original unchanged Product remains type approved.

A minor change in a Product does not generate a different behavior with respect to the specifications and ICS. In such cases, the Product shall not require new type approval. It is the responsibility of the Product Provider to maintain all evidentiary documentation describing why the modification made was minor in nature and could not negatively impact the functionality of the Product.

Any change to a Product, the Product Provider shall contact EMVCo to describe the nature of the change before processing any Change Request.

TA Bulletin #11 fifth edition, Minor/Major Changes, will be updated at a later date to contactless.
7 Change in Contact

The Product Provider shall inform the EMVCo CATA Secretariat if the company name, address or contact information changes, as stated in Product Provider registration.

Changes impacting company names may require a new contract with EMVCo. Generally, approval notification letters are not reissued when name changes are the result of corporate mergers, sales or other events covered by the “Assignment” and “Successors and Assigns” sections in the contract between Product Provider and EMVCo.

Modifications to company addresses and contact information will be applied to the EMVCo web site and subsequent communication (i.e. approval notification) with the Product Provider. Some organizations specify different contact information for various products. Contact information changes will be applied to all listed Product unless specially stated on the request.

If as a result of a company name change, address change or contact change, EMVCo needs to re-issue an existing LoA on explicit request from the Product Provider, EMVCo will request an administrative fee per LoA re-issuance. Please note that LoA’s are only issued electronically."
8 Appendix A: Templates and Forms

Product Provider can find all vendor forms he needs to complete on the EMVCo website (www.emvco.com) under Terminal Type Approval, section Type Approval Vendor Forms.

- Registration Form.
- Vendor Contract.
- Implementation Conformance Statement.
- Request for Approval.
  - Initial Submission,
  - Subsequent Submission.
- Request for Renewal.
9 Appendix B: Checksum Implementation Rules

The Product Provider shall include in the Product submitted software a checksum computation following the below rules:

• Each Kernel Module shall have a unique Checksum.
• The Checksum computation of each Kernel Module shall include all requirements of the Kernel Module.
• The Checksum computation shall include the following data element by kernel:
  o For Kernel C-1:
    ▪ None
  o For Kernel C-2:
    ▪ None
  o For Kernel C-3:
    ▪ Terminal Transaction Qualifier (TTQ)
  o For Kernel C-4:
    ▪ None
• When the Kernel Module is based on several Software Modules (such as using external routines, libraries, etc), each Software Module shall have a unique Checksum. In this case the Kernel Module Checksum shall be the Checksum computation over all Software Module checksum values.
• Any change in a Kernel Module or a Software Module shall generate a new unique Checksum value of the changed Kernel Module or Software Module.
• Product Provider shall use an algorithm that generates a unique value each time the module is changed.
• The Product shall contain a software mechanism to easily retrieve all checksum values of all Software Modules (libraries, Software Modules, Kernels, Entry Points,...) when these Software Modules are loaded in the Product. When used, this software mechanism shall dynamically compute the Kernel and Entry Point Checksums (not necessary for the Software Modules or libraries).

These rules apply to Product with modular Architecture or not.

For a Contactless Product having a Modular Architecture, the following Checksum shall be identified independently.

• A Checksum for the Book A & B module,
• A Checksum for each EMVCo Kernel C-n modules,
• A Checksum for each test kernels present in the Product.

For a Contactless Product having a Non Modular Architecture, a unique Checksum shall be identified.

Note: If a Product Provider submit a first Product, and he as not yet a Modular Label, Checksums will be required as for a Contactless Product having an Modular Architecture (multiple Checksum required). In case that the Modular Label failed (or is not requested by...
the Product Provider), the submitted Product will be considered as a Contactless Product having a non Modular Architecture, but in that case the referenced checksums in the LoA will the multiple checksum provided and not the single checksum expected for a Contactless Product having a non Modular Architecture.

The below figure provides an example of Checksum coverage

In this example, the Full Kernel C-n functionalities are split over a software Kernel C-n Module (blue box) and 3 external libraries/modules (Yellow boxes).

Each software module (Kernel C-n, External Library 1, External Library 2 and External Library n) shall have its own unique Checksum.

The Full Module Checksum must be computed over all software module libraries.

Same for the Kernel C-m. The yellow external libraries/modules are included in two different checksums.

The value of Kernel C-n checksum and the value of Kernel C-m checksum shall be different.

Note 1: All Checksum computation changes are considered as a major change of the Contactless Product and require new approval.

Note 2: Contactless Products submitted for renewal, where initial submissions were
accepted without the present Checksum rules, are allowed for renewal submission without the present Checksum rules.

**Note 3:** Contactless Products subsequent submissions, where Initial Product was accepted without the present Checksum rules, are allowed for subsequent submission without the present Checksum rules.
10 Appendix C: Type Approval of Derivative Product

The purpose of this appendix is to describe the EMVCo administrative procedures when the Product Provider wants to submit a Derivative Contactless Product for approval.

10.1 Definition of a Derivative Contactless Product

A Derivative Contactless Product is a derivation of a Contactless Product following the standard Contactless Product definition:

- FIT
- ICR
- Combo

A Derivative Contactless Product, is based on an approved Contactless Product and one of the following changes has been made:

- Change in (or of) PCD
- Change in (or of) IFM (if present)
- Adding a new Configuration in the Contact L2 MCK process (if present)

Any other change (such as software change) of an approved Contactless Product is not considered as a derivation and therefore cannot follow the present Type Approval Process for Derivative Contactless Product.

10.2 Type Approval Procedures

The present section describes the Type Approval Procedures for Derivative Contactless Product.

10.2.1 Derivative Contactless Product Type Approval approach

The below figure shows an example of several Derivative Contactless Products derived from the same initial Contactless Product. In the example, the derivatives are:

- Change of the PCD for Derivative Product 1 and 2.
- Adding new MCK configurations in the L2 MCK Kernel (the initial product contained a contact part with IFM and L2 MCK kernel) for Derivative Product 3, 4 and 5.
- Change or new contact IFM (initial product contained a contact part with IFM and L2 MCK kernel) for Derivative Product 6, 7 and 8.
10.2.2 Derivative Contactless Product Procedures

The below figure shows the diagram of a Type Approval Processes for Derivative Contactless Product:

This figure shows that from the Initial Product, the Product Provider will submit 8 Derivative Contactless Products and for each submission, the figure shows what testing needs to be performed.
10.2.2.1 PCD Change Derivative Contactless Product

When the change in the Contactless Product relates to the PCD, the Product Provider shall:

- Follow the standard Type Approval process for PCD (EMVCo Type Approval Contactless Terminal Level 1 Administrative Process, latest version), and obtain the L1 contact LoA of the new/changed PCD,
- Perform the Derivative Contactless Product Type Approval (see section 12.2.2.4 below)
- Submit the Derivative Contactless Product Request for Approval (see section 12.2.2.5 below)

**Note1:** The PCD L1 Contactless Type Approval Process maybe performed in parallel with the Derivative Contactless Product Type Approval Process, as long as the PCD LoA has been granted before submitting the Derivative Contactless Product Request for Approval.

10.2.2.2 IFM Change Derivative Contactless Product

When the change in the Contactless Product relates to an approved IFM Contact component, the Product Provider shall:

- Perform the standard Type Approval process for IFM (Terminal Level 1 Administrative Process, latest version), and obtain the L1 contact LoA of the new/changed IFM,
- Apply the Derivative Contactless Product Request for Approval (see section 10.2.2.5 below)

**Note1:** This process only applies if IFM initially referenced in the approved Contactless Product

**Note2:** For IFM change, no additional testing is required for the overall Derivative
Contactless Product Approval.

10.2.2.3 New MCK L2 Contact configuration Derivative Contactless Product

When the change in the Contactless Product relates to an additional L2 Contact Kernel MCK configuration (L2 Contact kernel referenced in the Contactless Product), the Product Provider shall:

- Perform the standard Type Approval process for additional L2 Contact Kernel MCK configuration (Terminal Level 2 Administrative Process, latest version), and obtain the L2 contact LoA for the new MCK configuration,
- Submit the Derivative Contactless Product Request for Approval (see section 10.2.2.5 below)

**Note1:** This process only applies if the L2 Contact Kernel is initially referenced in the approved Contactless Product.

**Note2:** For additional MCK configuration, no additional testing is required for the overall Derivative Contactless Product Approval.

10.2.2.4 Derivative Contactless Product Type Approval

**Product Provider and Laboratory Operations**

The Product Provider and the Laboratory perform the following operations as per type approval procedure:

- The Product Provider is free to select any EMVCo accredited Laboratories for the purpose of achieving EMVCo Contactless type approval. Once the laboratories are selected, the Product Provider and Laboratories execute a contract defining the individual rights and obligations of the contracting parties. The provisions of Product Provider/Laboratory contract are up to the contracting entities and entirely out of EMVCo's scope. Any fees payable to the Laboratory in respect of the tests to be conducted are solely at the discretion of the Laboratory.
- The Product Provider sends the appropriate Implementation Conformance Statement (ICS) to the chosen Laboratory for each Product under test that it submits. The ICS format and content requirements are determined by EMVCo.
- The Laboratory(ies) tests the Products in accordance with EMVCo test procedures below.
- The Laboratory(ies) sends the final test reports to the Product Provider being the owner of the test results. The Laboratory(ies) must advise EMVCo of any failures that have been encountered during testing.
- The Laboratory(ies) submits an original copy of the test results report to the EMVCo CATA Secretariat, and ensures that the Product Provider has already submitted relevant completed Request For Approval form.

**Testing procedure for approval:**

The Laboratories must perform the following testing procedure:

- Multi-Kernel Independency testing using [TA M], where independency test set of all C Kernel(s) present in Product applies (no modular testing), with the following
process:

- Verify that Independency Tests pass correctly (transactions accepted) for all C kernel(s) present.

- Performance Testing using [TA P], for each Kernel C-n present

- Testing must be done with the final product. This means Laboratories must verify the checksum of each module (Entry Point, Kernels C-n present in the product), even for the module(s) not tested. These checksums values shall be the same as the one declared in the ICS and the one in the initial product. It is not allowed to change any Checksum values during the type approval, as the product submitted shall be the final Product.

**Type Approval Test Report**

The test reports must include the following information:

- Identification of the Laboratory.
- Identification of Product Provider.
- Identification of Derivative Product.
- Identification of the INITIAL Product.
- Identification of the new/changed PCD

- Product Provider signed Implementation Conformance Statement identifying Product that has been tested.

- Also for each tool used the below information:
  - EMVCo Contactless Specification/test case version used for test,
  - Identification of all Laboratory test equipments and software versions used during the tests,
  - Dates tests were performed,
  - The test case execution results in the test reports for each test case:
    - EMVCo defined test case number and title,
    - Pass, Fail, or Not Applicable test result,
    - For Not Applicable designated test case results, an explanation justifying this designation,
    - Additional Laboratory comments, if appropriate,
  - A detailed description of any exception test(s) performed or equipment utilized and a description of related test results,
  - A detailed description of the Product Provider’s modifications that may be required for the purpose of successfully executing the EMVCo test cases.

### 10.2.2.5 Derivative Contactless Product Request for Approval

**Product Provider Request for Approval**

- The Product Provider prepares the Request for Approval form and submits it to the EMVCo CATA Secretariat.
• EMVCo can then issues the invoice for the Product Provider.
• Product Provider submits payment to EMVCo based on the received invoice.

The request for review will comprise:
• Letter requesting approval (RFA form) for Derivative Product.
• The complete and unchanged test reports as received from the Laboratory(ies), for PCD change only.
• EMVCo invoice settled.
• Any additional supporting documentation the Product Provider believes is appropriate.

**EMVCo Approval**

Upon receiving the request, EMVCo will:
• Review the submitted test reports and determine if type approval should be granted for the Product, for PCD changes only.
• Notify the Product Provider of type approval or denial for the Product.
• Update the Letter of Approval of the initial Contactless Product, if appropriate.
• Provide notification of EMV Product type approval.

The Contactless Product LoA of the initial Product will be updated to identifies all approved Derivations of this Contactless Product, and this on the same LoA (which will be updated with the derivative information’s of each derivation approved).

LoA, depending on the derivation, will be updated with:
• The approved Level 1 PCD(s) added for this product.
• The approved Level 1 Contact IFM(s) added for this product (if present).
• The approved Level 2 Contact Kernel(s) added for this product (if present).

The rest of the LoA information remains strictly identical to initial Product LoA (for example Expiration Date remains the date of the initial Product submitted).

**10.3 Subsequent Submission and Derivative Contactless Product**

This section describes a case as follows:
• A Contactless Product was Type Approved.
• Derivative Contactless Product(s) was Type Approved based on the initial Contactless Product and listed on the same LoA.
• The Product Provider wants to submit a Subsequent Submission of the Initial Contactless Product (due to a Kernel or an Entry Point change) and its Derivative Contactless Products listed on the same LoA.
For this case the following rules applies:

1. The Subsequent Submission of the Contactless Product applies as described in section 6.4.5 of the present document (Subsequent Submission).

2. For all Derivative Contactless Product listed on the LoA, with derivation related to an IFM change or a MCK configuration, the Derivative Contactless Product Process applies as described in section 12.2.2, but they are submitted in a single Subsequent Submission request.

**Note:** If the IFM or MCK configuration were already type approved, no testing is required, only the LoA issuance.

3. For each Derivation related to a PCD change, the Derivative Contactless Product Process applies as described in section 12.2.2 with the following change in the section 12.2.2.4:

   a. Case of a PCD which has been Type Approved in one of previous Derivative Contactless Product:

      i. If the Subsequent Submission concerns a change/addition of a Kernel C-n (C-1 to C-7): The testing of section 12.2.2.4 is limited to the Laboratory able to run the Kernel C-n testing (only one laboratory is needed). The Laboratory selected has to run the Multi Kernel Independency and Performance tests but limited to:

         - Performance Testing using [TA P], limited to the concerned Kernel C-n (No performance testing of the other Kernel present)
         - Multi-Kernel Independency testing using [TA M] for all Kernel(s) present, (no modular testing). Where the test cases of the concerned Kernel C-n shall have a positive result, and the transactions of the test cases of the other kernels present (C-1 to C-7 and C-REGX) shall be approved (no need to verify the pass criteria of these test cases)

      ii. If the Subsequent Submission concerns a change in Book A & Book B (Entry Point) module: no testing required for section 12.2.2.4

      iii. If the Subsequent Submission concerns a change/addition of a Kernel C-REGX: The testing of section 12.2.2.4 is limited to the Laboratory able to run the Kernel C-REGX testing (only one laboratory is needed). Multi-Kernel Independency testing using [TA M] for all Kernel(s) present, (no modular testing). The test cases of the concerned Kernel C-REGX shall have a positive result, and the transactions of the test cases of the other kernels present (C-1 to C-7) shall be approved (no need to verify the pass criteria of these test cases).

      iv. If the Subsequent Submission concerns a change/addition of a the Contact Application Kernel component (if present in the Product): no testing required for section 12.2.2.4.

   b. Case of a PCD which has not been Type Approved in one of previous Derivative Contactless Product: standard testing of section 12.2.2.4 applies.

The Figure below shows an example of this process when the Subsequent Submission concern a Kernel C-n change/addition:

**Fig. X: Kernel C-n change/addition case**
Note: Product Provider as to submit a single Subsequent Submission whatever is the number of derivation present in the Contactless Product, and therefore to pay only once the subsequent submission fees.
11 Appendix D: Modular Architecture for Terminal with separate Contact/Contactless Architecture

The present annex describes a specific case of Terminal Architecture considered as Modular Architecture. This case covers single box Terminal with a Contact Product and a Contactless Product present onboard. These Contact and Contactless Products are totally separated. This separation applies to the Software and Hardware architecture.

In this architecture, there is no common kernel, no libraries shared, no common drivers,…between Contact and Contactless.

In this specific case, the Contact part of the Terminal could be considered as independent from the Contactless part, in which case the Product has two independent software modules in the Terminal.

EMVCo considers this specific case as a Modular Architecture hence, this Product could apply for Modular Label where two software modules are present: the Contact Module and the Contactless Module.

As for any other Modular Architecture, after granting the Modular Label, all rules applying to Modular Architecture are valid, such as:

- Software module change or update,
- Derivative Product LoA,
- ...

So the two products of the Terminal can change independently from each other.

Testing requirement: For this specific Modular Architecture, Modular testing shall not be performed. All others testing requirements of this document apply as per the processes.

Examples of such architecture could be:

- a S-ICR (figure 2 of the present document) where the contact part is in the Terminal (POS System) and no relationship between Reader and Terminal Software (so two separated software architecture).
- An ATM where both Contact and Contactless Hardware and Software are strictly separated.
12 Appendix E: Contactless Trade Mark License

This appendix describes the enhancement of the present Administrative Process to support EMVCo requirements related to the Contactless Marks Trademark License Agreement for PCD contained in the Contactless Product to comply with.

Support of the Contactless Marks Trademark License Agreement by the PCD vendors implies following requirements in the administrative Process of the Contactless Product as follows:

- Contactless Product Providers have to sign the ‘Contactless Marks Trademark License Agreement’, prior to any product submission.
- Laboratory have to check the presence and the compliance of the EMVCo symbol on the PCD installed in the Contactless Product, when performing the Contactless Product Type Approval Tests
- When reviewing any Contactless Product Request for Approval, EMVCo will check the following:
  - Contactless Product Provider has previously signed the Contactless Marks Trademark License Agreement
  - The ‘presence of the EMVCo Symbol’ result in the Laboratory Test report.

The following changes in the Contactless Product – Administrative Process – Version 1.2 apply:

Section 6.4.1.3 EMVCo Contract

A new paragraph is added at the end of the section: The PCD Vendor must complete and sign the: ‘Contactless Marks Trademark License Agreement - Vendor and Brand versions EMVCo’ available at EMVCo website. The agreement has to be signed with EMVCo prior to submission of product. PCD Vendor must submit the agreement, if not already signed. The agreement has to be sent to the EMVCo Legal Secretariat at emvcolegal@emvco.com

Section 6.4.1.4 Type Approval Test Report

A new note is added at the end of the section: The test report submitted by the laboratory shall contain the pass/fail result of checking the presence and the compliance of the EMVCo symbol on the approved PCD of the Contactless Product tested.
13 Appendix F: Contactless Kernel C-REGx Procedure

The purpose of this appendix is to describe the EMVCo administrative procedures when the Contactless Product contains a Contactless Kernel C-REGx or is updated with a Contactless Kernel C-REGx.

13.1 Definition of a Contactless Kernel C-REGx

A Contactless Kernel C-REGx (where x is higher than 4), is a proprietary kernel software associated with an EMVCo Kernel ID that has been registered following the EMVCo Kernel ID registration process.

To follow this current Type Approval procedure, the Kernel ID linked with this Contactless Kernel C-REGx shall have been registered previously with EMVCo. Please visit the EMVCo website for further information about Kernel ID registration.

13.2 Type Approval Procedures

This section describes the Type Approval Procedures for the following cases:

- A Contactless Product submitted for the initial Approval contains a Contactless Kernel C-REGx.
- A Contactless Product already approved without a Contactless Kernel C-REGx is enhanced by adding a Contactless Kernel C-REGx.

13.2.1 ‘Contactless Product submitted for the initial Approval contains a Contactless Kernel C-REGx’

This section describes the case of a Contactless Product submitted for the initial Approval contains a Contactless Kernel C-REGx. The Contactless Product submitted for EMVCo approval contains:

- Book A & B
- One or several EMVCo Kernel(s) C-n
- A (or several) proprietary Contactless Kernel C-REGx

13.2.1.1 Case of ‘Standard Process’

The procedure is similar to section 2.2.1.1 ‘Request For Approval’, with the following differences:

- Contactless Kernel C-REGx Type Approval is not managed by EMVCo. It is the responsibility of the Contactless Kernel C-REGx Provider to ensure C-REGx testing and approval.
- EMVCo performs Book A & B testing, Kernel(s) C-n testing and Independency testing.
Testing procedure for approval:
Laboratories performing testing of Products shall perform in addition to the standard testing procedure the following checks during testing:

- Laboratories shall check the value of the checksum of Kernel C-REG_x, same as for the other modules, even if this module is untested.
- Multi-Kernel Independency testing as described in [TA M], is enhanced with a set of test dedicated to Contactless Kernel C-REG_x.

**Note 1:** The Contactless Kernel C-REG_x Provider shall provide to each Laboratories the set of Contactless Kernel C-REG_x Test Card corresponding to the Card profile [LTsetting10.x] described in [TA A&B].

### 13.2.1.2 Case of ‘Optimized Process’

The procedure is similar to section 2.2.2.2 'Initial Product Submission', with the following differences:

- Contactless Kernel C-REG_x Type Approval is not managed by EMVCo. It is the responsibility of the Contactless Kernel C-REG_x Provider to ensure C-REG_x testing and approval.
- EMVCo performs Book A & B testing, Kernel(s) C-n testing, Modularity and Independency testing.

Same fees apply as described in optimised process.

Testing procedure for approval:
In addition of the standard testing, Laboratories performing testing of Products shall perform the following checks:

- During testing, as for the other modules, Laboratories shall check the value of the checksum of Contactless Kernel C-REG_x, even if this module is untested.
- Multi-Kernel Independency testing as described in [TA M], enhanced with a set of test dedicated to Contactless Kernel C-REG_x.

**Note 1:** The Contactless Kernel C-REG_x Provider shall provide to each Laboratories the set of Contactless Kernel C-REG_x Test Card corresponding to the Card profile [LTsetting10.x] described in [TA A&B].

**Note 2:** Modular testing does not cover Contactless Kernel C-REG_x.

### 13.2.2 ‘Contactless Product submitted for the subsequent Approval with a Contactless kernel C-x’

This section describes the case of a Contactless Product already approved without a Contactless Kernel C-REG_x that is enhanced by adding a Contactless Kernel C-REG_x in this Contactless Product.

The Contactless Product submitted for INITIAL approval did contain:

- Book A & B
• One or several EMVCo Kernel(s) C-n

The same Contactless Product submitted for SUBSEQUENT approval contains the following:

• Book A & B
• One or more EMVCo Kernel(s) C-n
• A (or several) proprietary Contactless Kernel C-REGx

The procedure is similar to section 2.2.2.2 'Initial Product Submission' with the following differences:

- Contactless Kernel C-REGx Type Approval is not managed by EMVCo. It is the responsibility of the Contactless Kernel C-REGx Provider to ensure C-REGx testing and approval.
- EMVCo performs Book A & B testing, Kernel(s) C-n testing, Modularity andIndependency testing.

Testing procedure for approval:

In addition to standard testing, Laboratories performing testing of Products shall perform the following checks:

• During testing, as for the other modules, Laboratories shall check the value of the checksum of Contactless Kernel C-REGx, even if this module is untested.
• Multi-Kernel Independency testing as described in [TA M], enhanced with a set of test dedicated to Contactless Kernel C-REGx.

Note 1: The Contactless Kernel C-REGx Provider shall provide to the selected Laboratories the set of Contactless Kernel C-REGx Test Cards corresponding to the Card profile [LTsetting10.x] described in [TA A&B].

Note 2: Modular testing does not cover the Contactless Kernel C-REGx.

Note 3: Subsequent Submission with Contactless Kernel C-REGx is only possible without Extended Date.

13.2.3 LoA issuance

As per the other processes, the LoA will be issued with the ICS attached, where the information about the Contactless Kernel C-REGx can be found.
14 Appendix G: Modular Product containing a Contact Kernel

14.1 Case of a Modular Contact Kernel

14.1.1 Definition of a Modular Contact Kernel
The present section describes the case of a Contactless Product where the Contact Kernel, if present, follow the Modular Architecture rules. This Architecture apply on Contactless Product containing a Contact Kernel and PCD, where:

- The Modular Architecture rules are applicable on the Contact Kernel like for any other Contactless Kernel of the Product,
- The Contact Kernel as a valid Level 2 LoA,
- The PCD as a valid Level 1 LoA.

14.1.2 Type Approval Procedures
This section describes the Type Approval Procedure for a Contactless Product submitted for the initial of subsequent submission containing a Modular Contact Kernel.

The procedure are similar to section 2.2.2.2 'Initial Product Submission' and section 2.2.2.3 'Subsequent Product Submission', with the following additions:

- ICS must be submitted with the information that the Contact Kernel present is modular,
- Contact Level 2 Kernel must be tested like today following the 'Contact Terminal Level 2 Administrative Process'.
- Independency Testing of the Contactless Product will be performed additionally on the Modular Contact Kernel.

Same fees apply as described in optimised process.

Testing procedure for approval:
In addition of the standard testing, Laboratories performing testing of Products shall perform the following checks:

- During testing, as for the other modules, Laboratories shall check the value of the checksum of Modular Contact Kernel, even if this module is untested.
- Multi-Kernel Independency testing as described in [TA M], enhanced with a set of test dedicated to Modular Contact Kernel.

Note 1: As the Contact Kernel is Modular, during a Subsequent Submission concerning this kernel, the testing will limited (like for any other Contactless Kernel) to Contact Kernel testing (following Contact Terminal Level 2 Administrative Process’) and Independency testing.

14.1.3 LoA issuance
As per the other processes, the LoA will be issued with the ICS attached, where the
14.2 Case of a Non Modular Contact Kernel present in a Modular Product

14.2.1 Definition
The present section describes the case of a Modular Contactless Product where the Contact Kernel, if present, does not follow the Modular Architecture rules.

14.2.2 Type Approval Procedures
This section describes the Type Approval Procedure for a Contactless Product submitted for the initial of subsequent submission containing a non Modular Contact Kernel.

The procedure are similar to section 2.2.2.2 'Initial Product Submission' and section 2.2.2.3 ‘Subsequent Product Submission’, with the following additions:

- ICS must be submitted with the information that the Contact Kernel present is non modular,
- Contact Level 2 Kernel must be tested like today following the ‘Contact Terminal Level 2 Administrative Process’.
- If the Contact L2 was already approved, then the test of the Contact Kernel within the Contactless Product is for all configurations the 2CT + 2CS Series apply.
- Independency Testing of the Contactless Product will be performed on the non Contact Kernel.

Same fees apply as described in optimised process.

Testing procedure for approval:
In addition of the standard testing, Laboratories performing testing of Products shall perform the following checks:

- During testing, as for the other modules, Laboratories shall check the value of the checksum of the non-Modular Contact Kernel, even if this module is untested.
- Multi-Kernel Independency testing as described in [TA M], enhanced with a set of test dedicated to Modular Contact Kernel.
15 Appendix H: Autorun Parameter Testing

The Autorun Parameter is an option in the Book A & B Implementation. EMVCo recognized that some Contactless Product implementation could support this feature but it could be either activated or deactivated depending on the local need.

In that case the following apply: the ICS questions related to Autorun Parameter shall be filled as such:

- Does the terminal support Autorun: Yes
- If yes at previous question, can the terminal deactivate the Autorun Parameter functions: Yes

Laboratory shall perform testing as described below:

- The testing shall be performed with Autorun option as No,
- Additional test cases shall be run with the Autorun option as Yes (Only the test case related to Autorun function: [Autorun] supported)
16 Appendix I: Contactless Product Porting into other Terminal Type

The purpose of this appendix is to describe the EMVCo administrative procedures when the Product Provider wants to submit to port a Contactless Product into another Terminal Type (e.g. from a FIT to a S-ICR).

Porting a Contactless Product into another Terminal Type can be considered under the following conditions:

- Porting is allowed between the following Terminal Type:
  - a FIT,
  - a S-ICR,
  - a Combo,

- The following components shall be identical:
  - The Operating System,

- The following components shall be Level 1 Type Approved:
  - The IFM,
  - The PCD,

Any other porting or a change in the above component is considered as a new or a changed Product and (therefore cannot follow the present Type Approval Process for Contactless Product Porting.

16.1 Type Approval Procedures

The present section describes the Type Approval Procedures for Contactless Product Porting.

16.1.1 Product Provider and Laboratory Operations

The Product Provider and the Laboratory perform the following operations as per type approval procedure:

- The Product Provider is free to select any EMVCo accredited Laboratories for the purpose of achieving EMVCo Contactless type approval. Once the laboratories are selected, the Product Provider and Laboratories execute a contract defining the individual rights and obligations of the contracting parties. The provisions of Product Provider/Laboratory contract are up to the contracting entities and entirely out of EMVCo’s scope. Any fees payable to the Laboratory in respect of the tests to be conducted are solely at the discretion of the Laboratory.

- The Product Provider sends the appropriate Implementation Conformance Statement (ICS) to the chosen Laboratory for each Product under test that it submits. The ICS format and content requirements are determined by EMVCo.

- The Laboratory(ies) tests the Products in accordance with EMVCo test procedures below.
The Laboratory(ies) sends the final test reports to the Product Provider being the owner of the test results. The Laboratory(ies) must advise EMVCo of any failures that have been encountered during testing.

The Laboratory(ies) submits an original copy of the test results report to the EMVCo CATA Secretariat, and ensures that the Product Provider has already submitted relevant completed Request For Approval form.

16.1.2 Testing procedure for approval:

The Laboratories must perform the following testing procedure:

- Multi-Kernel Independency testing using [TA M], where independency test set of all C Kernel(s) present in Product applies (no modular testing), with the following process:
  - Verify that Independency Tests pass correctly (transactions accepted) for all C kernel(s) present.
- Performance Testing using [TA P], for each Kernel C-n present
- Regression testing of each module present (Book A & Book B, kernels C-1 to C-7)
- Testing must be done with the final product. This means Laboratories must verify the checksum of each module (Entry Point, Kernels C-n present in the product), even for the module(s) not tested. These checksums values shall be the same as the one declared in the ICS and the one in the initial product. It is not allowed to change any Checksum values during the type approval, as the product submitted shall be the final Product.

Contact kernel presence:

The Laboratories must perform the following testing on the Contact Kernel when present in the ported Product:

- If the Contact Kernel is Modular, testing of the Contact Kernel is limited to Independency testing using [TA M]
  - Verify that Independency Tests pass correctly (transactions accepted) for the Contact kernel.
- If the Contact Kernel is not Modular, the testing shall be:
  - Independency testing using [TA M]
  - Test of the Contact Kernel using the Contact level 2 Test plan, for all Configurations the 2CT + 2CS Series apply

16.1.3 Contactless Product Porting Request for Approval

Product Provider Request for Approval

- The Product Provider prepares the Request for Approval form and submits it to the EMVCo CATA Secretariat.
- EMVCo can then issues the invoice for the Product Provider.
- Product Provider submits payment to EMVCo based on the received invoice.

The request for review will comprise:
EMVCo Approval

Upon receiving the request, EMVCo will:

- Review the submitted test reports and determine if type approval should be granted for the Product.
- Notify the Product Provider of type approval or denial for the Product.
- Create the Letter of Approval of the Ported Contactless Product.
- Provide notification of EMV Product type approval.