



Mastercard Card Quality Management (CQM)

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Vendor Certification Process

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1 Introduction

1.1 Audience

This process document is aimed at payment card industry actors seeking CQM certification of their manufacturing or personalization facilities.

1.2 CQM Introduction

Mastercard has developed a comprehensive Card Quality Management (CQM) program in order to ensure that reliable, interoperable and high quality Card products are issued to Mastercard's customers (banks) and used by the cardholders.

Since 2009 Mastercard has been outsourced the CQM services and operations to Smart Consulting.

Mastercard mandates worldwide the CQM certification for all EMV cards regardless of the communication technology (contactless, contact and dual).

- ✓ CQM is owned by Mastercard.
- ✓ CQM services and operations are performed by Smart Consulting acting on behalf of Mastercard
- ✓ CQM audits are performed by CQM qualified auditors under the supervision and coordination of Smart Consulting.

The selection of the CQM qualified auditors is under CQM client's discretion and responsibility.

The CQM program is based on CQM requirements self-assessment made by card vendors, card components suppliers and personalization bureaus.

Those assessments are reviewed and checked during on-site audits.

Companies (named Vendors in the present document) involved in manufacturing or personalizing Chip Cards must apply to get some CQM labels for any of the following modular activities:

- ✓ IC Integrated Circuit (Chip) manufacturing
- ✓ ICM Integrated Circuit Module (Chip-module) manufacturing (chip packaging into chip-carrying-modules)
- ✓ IL Inlays aimed for both dual cards and contactless-only cards
- ✓ CB Card Body manufacturing
- ✓ ICC Integrated Circuit Card, embedding of the chip-module into the card body
- ✓ PICC Lamination of the chip-inlays with plastic sheets for pure contactless cards
- ✓ P Card Personalization

The CQM certificate and its related labels (per site and per activity) is a pre-requisite for any Vendor applying for product testing and approval to IAT program.

Mastercard Certified Vendors List is updated with CQM certified companies, related locations and activities.

1.3 Acronyms and Definitions

Acronyms/Name	Definitions
GVCP	Global Vendor Certification Program
CSI	Card Structure Integrity and Security
CAST	Compliance Assessment & Security Testing
CQM	Card Quality Management
IAT	Interface and Application Testing
NC	Non-Conformity against CQM Requirements
LoA	Letter of Approval
Certificate	CQM document listing the labels for all company sites and approved activities.
SED	Smart Consulting Yearly Service Expiration Date.
CED	CQM Certificate Expiration Date, it never exceeds the SED.
Approval Label	Label granted after successful CQM audit.
Recognition Label	Interim label granted before audit, based on CQM self-assessment and audit date(s) commitment.
Contact Card	Card supporting only the contact interface
Contactless Card	Card supporting only the contactless interface.
Dual Card	Card supporting both the contact and contactless interfaces
Vendor	Any Company involved in producing or personalizing Cards for Mastercard

1.4 CQM Webpage

Process documents, requirements, forms and assessment plans are published on Smart Consulting website on the CQM page at:

www.smart-consulting.com/card-quality-management/

1.5 Contact at Smart-Consulting

Should you have any questions on the CQM process and requirements, please contact: cqm@smart-consulting.com

1.6 Contact at Mastercard

Mastercard values your feedback on CQM, should you have any comments please contact: cqm_support@mastercard.com

1.7 Reference Documents

Document	Last release available at
CQM Overview	www.smart-consulting.com
CQM Process	
CQM Non-Disclosure Agreement (NDA)	
CQM Registration Form	
CQM Requirements	
CQM Assessment Plan Form (Quality Questionnaire)	
CQM Certification Body Services Offer	Email: cqm@smart-consulting.com
Quality Management Systems Requirements ISO-9001	www.iso.org
General Requirements for the Competence of Testing and Calibration Laboratories ISO-17025	

Vendors (manufacturers and personalization bureaus) shall refer to www.smart-consulting.com to ensure they are using the last version of the documents.

1.9 Mastercard Certification and Approval Programs

Program Name	Company Program	Product Program
Global Vendor Certification Program “Physical and Logical Security”	GVCP GVCP-helpdesk@mastercard.com	
Brand and Card Design Rules		Card Design*
Card Structure Integrity and Security “Innovative form factors or card bodies”		CSI CSI_Security@mastercard.com
Card Quality Management	CQM cqm@smart-consulting.com	
Compliance And Security Testing		CAST cast@mastercard.com
Interface and Application Testing “Functional testing”		IAT chip_certification_chd@mastercard.com

* Vendors shall contact their local Mastercard representative.

1.9.1 GVCP

GVCP is a program covering assessment of the physical security of the manufacturing site and logical security of the production data network environment, hardware, and software. This program is used to maintain and improve your security infrastructure and to prevent attacks against Mastercard products, components, and related network and company image.

GVCP is a prerequisite to obtain any CQM labels for plastic card manufacturing, chip cards manufacturing and chip card personalization and to get the final Letter of Approval (LoA) when completing successfully fully IAT.

Vendors' sites and CQM approved production activities are listed in the Mastercard List of Certified Vendors (updated monthly) and available for Mastercard's customers only on www.mastercardconnect.com

1.9.2 CSI

In addition of CQM program, any products considered by Mastercard as “innovative” such as non-ID1 form factors, non-ISO or non-PVC and Interactive cards embedding new technology shall go through CSI program.

Vendors have to demonstrate how their innovative product is reliable, interoperable and secured before to get a CSI Notification Letter. For such innovative products, the CSI Notification Letter is a prerequisite to get the Mastercard product's LoA.

1.9.3 IAT

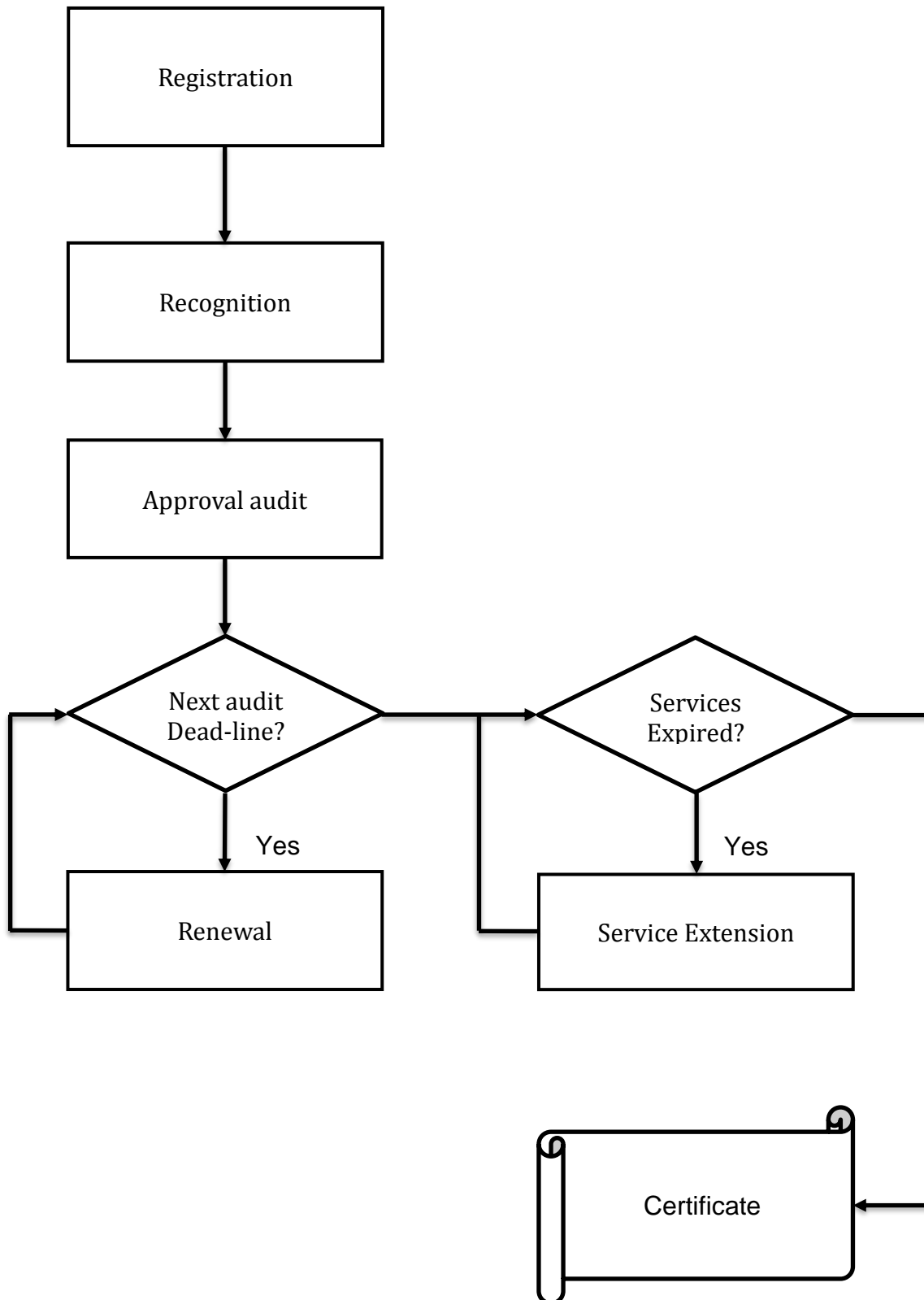
The Interface and Application Testing program defines testing and requirements the Vendor's product shall go through.

CQM, CAST, IAT and CSI if applicable, are some pre-requisites before to get any Letter of Approval for any Card product.

Vendors intending to register their product for testing and approval are invited to contact chip_certification_chd@mastercard.com All CQM labels shall be included in the CCF (Card Capabilities Form).

Each manufacturing site must receive approval for each product produced there.

2 CQM Process Flow



2.1 Registration

The vendor shall register to the CQM program by sending to cqm@smart-consulting.com.

The Excel file (2tabs) available for download at:
www.smart-consulting.com/card-quality-management/

The vendor shall send to Smart Consulting a scanned signed copy of the Non-Disclosure Agreement (NDA) to cqm@smart-consulting.com.

A copy signed by Smart Consulting will be returned to the Vendor.

The mandatory template is available:

www.smart-consulting.com/card-quality-management/

The vendor shall contact one or several CQM auditors.

As soon as the audit date is agreed with the selected auditor by the vendor, it shall be notified to Smart Consulting via the registration form update.

Smart Consulting will acknowledge the registration and send the first invoice with yearly fees.

2.2 Recognition

New sites or activities can benefit from CQM recognition labels before audit. This recognition phase cannot exceed 6 months.

Those recognition labels are granted as long as the following provisions are met:

- Site and activities have been Mastercard GVCP certified
- NDA received
- Registration form duly completed with known audit date(s)
- Self-assessment plan (quality questionnaire against CQM requirements) returned to both the auditor and Smart Consulting
- Yearly fees invoice paid

Smart Consulting will then provide the vendor with related interim labels for CQM recognition to apply for a Mastercard Letter of Approval with an expiry date limited to a maximum of 6 months.

2.3 Approval Audit

To get CQM Approval Labels the vendor's site(s) must be audited by a CQM qualified auditor.

2.3.1 Audit Agreement (Auditee-Auditor)

The selected audit offer must be signed by both the Auditee and the Auditor to make the Audit Agreement.

It shall refer to this process and clarify the respective duties and deadlines.

The Auditor selection is at the full discretion of the Auditee.

Here after contact details of the CQM qualified auditors:

Name	First Name		Company	Email	Country
Chen	Luke	陳明乾	TÜV SÜD	luke.chen@tuv-sud.tw	Taiwan
Ferreira	Luis		Agora Consult	agoraconsultsprl@skynet.be	Belgium
Gase	Axel		Kiwa Telefication	agase@telefication.com	Netherlands
Janczek	Thies		Cocaso	janczek@cocaso.com	Germany
Shinmoto	Tamon	真本 多聞	TÜV SÜD	tamon.shinmoto@tuv-sud.jp	Japan
Trüggelmann	Uwe		TruCert	uwe@trucert.com	Canada
Van Voorst	Ries		Dekra	ries.vanvoorst@dekra.com	Netherlands

2.3.2 On-site Audit and Audit Report

After the audit is complete, a corrective actions plan must be returned to the auditor regarding audit findings

The Audit report shall comply with the Audit Report template and related guidelines.

Note: the Auditor may supply a draft report to Smart Consulting for comments and validation at her/his discretion with Vendor’s prior approval.

The final audit report is due by the latest 1 month after the audit.

Smart Consulting will make the final assessment of the audit report and its annexes and will acknowledge it notifying both the Auditee and the Auditor with the final grade, labels upgrade, and deadline for the next audit report.

2.3.3 Audit Flow and Related Deadlines

Hereafter the different steps between the auditor, the auditee and Smart Consulting with its deadline.

Owner	Recipients	Deadline
Auditee	Registration to Smart Consulting	
Auditee + Auditor	Audit Agreement Auditee + Auditor	
Auditee	Audit Preparation to Auditor	2 weeks before the Audit (*)
Auditor	Audit	
Auditee	Action Plan to Auditor	2 weeks after the Audit (*)
Auditor	Final Audit Report to Smart Consulting and Auditee	4 weeks after Audit End
Smart Consulting	Audit Report Assessment to Auditee and Auditor	5 weeks after Final Audit Report
Auditee	Action Plan Completion to Auditor	17 weeks after Audit End (*)
Auditor	Action Plan Completion Report to Smart Consulting and Auditee	19 weeks after Audit End
Smart Consulting	Action Plan Completion Report Assessment to Auditee and Auditor	2 weeks after Action Plan Completion Report

2.4 Renewal Audit

Depending on the previous audit report acknowledgment, a renewal audit must be planned with respect to the notified audit report deadline.

2.5 One Year Extension

Given that fees are paid to Smart Consulting on yearly basis, the CQM certificate is limited to a maximum of 12 months.

To get it renewed, Smart Consulting will be issuing the related invoice 3 months before the Service Expiration Date (SED).

Certificate is extended for 12 months after Smart Consulting is notified of the following:

- All due audit(s) reports(s) are available
- Next 12 months audit plan is available
- Yearly audit fees are paid

2.6 CQM Certification Termination

Here are some cases where the CQM Certificate can be either revoked or terminated.

Mastercard GVCP decertification leads automatically to CQM certification termination.

CQM certification termination may be requested by Smart Consulting to Mastercard in case of missing yearly payment fees.

CQM certification termination may be requested by Smart Consulting to Mastercard in case of failed audit.

CQM certification termination may be requested by the Vendor itself via the appropriate form and returned to Smart Consulting. This form can be requested from Smart Consulting by email.

3 Audit Results

3.1 Audit findings

During the audit, the Auditor may identify non-compliances to CQM Requirements, they are called 'findings'.

3.1.1 Major non-conformity (NC+)

Formal NC to CQM Requirements; auditor considers the NC a risk that the vendor might produce non-conforming products, or that the vendor might be unable to prove product conformity.

Example: The vendor is unable to prove that embossing cannot affect the functionality of the antenna, and the vendor does not conduct functional verification of the contactless functionality after embossing at the required sampling frequency. The auditor requests the implementation of the functional test after embossing.

3.1.2 Minor non-conformity (NC-)

The Auditor believes that the product is in conformity with CQM requirements, and that the vendor has the ability to demonstrate that the product conformity is not compromised.

Example: A work instruction providing relevant information to the operators on how a process shall be conducted, is not a controlled document. The auditor will request the vendor to add the related work instruction to the list of controlled documents.

3.1.3 Recommended Improvements (RI)

Auditor believes that an identified issue should be resolved to reduce the risk of NCs occurring, even if the issue identified by the auditor does not constitute a formal NC.

Example: An operator, in charge of conducting a CQM required quality control, is initially struggling to demonstrate how he/she performs the control during the audit assessment, but at the end, he/she manages to prove the product conformity. The auditor will request the vendor to improve the test instruction and/or provide additional training to the operators.

3.1.4 Note

The Auditor leaves the decision to the vendor to implement or improve the control.

Example: The monitoring or control is demonstrated correctly and complies with the CQM requirements; however the auditor believes that modifying the way the control is implemented and/or performed might be more efficient.

3.2 Grade - Quality Rank

The Audit report includes a quality rank (grade) recommendation to define the next audit deadline.

Grade	Descriptions	Action plan Completion Check	Certificate Validity	Next audit
A	Pass without major NC with limited number of minor NC		12 months	< 3 years
B	Pass with limited number of major NC	< 6 months	12 months	< 2 years
C	Interim Pass	< 6 months	12 months	< 1 year
D	Fail	ASAP	No certificate is delivered	As soon as corrective action are completed

Smart Consulting notifies the grade after assessment of the audit report and considering the Audit Report recommendation.

Rank A

is granted when no major non-conformity has been found, and number of minor non-conformities remains limited.

Next audit shall be carried out within 3 years

Rank B

is granted when number of major non-conformities remains limited.

Corrective actions status with related evidences shall be communicated to the auditor.

Next audit shall be carried out within 2 years

Rank C

is granted when a significant number of non-conformities are found

Corrective actions status with related evidences must be communicated to the auditor.

The auditor shall control implementation of the corrective actions and provide Smart Consulting with a report to extend the labels after 6 months

Next audit shall be carried out within 1 year.

Note: 3 consecutive Rank C will lead to a fail (Rank D).

Rank D

is granted when the vendor fails the audit.

A corrective actions status with related evidences must be communicated to the auditor.

The auditee shall ensure the corrective actions plan is closed as soon as possible.

The auditor shall control implementation of the corrective actions and schedule a new audit with the Vendor as soon as possible.

Mastercard reserves the right to ask the Vendor a copy of the audit report

4 CQM labels

4.1 Modular manufacturing Activities

Chip Cards manufacturing is split into modular production activities formerly called *workshops*

- ✓ IC Integrated Circuit (Chip) manufacturing
- ✓ ICM Integrated Circuit Module (Chip-module) manufacturing (chip packaging into chip-carrying-modules)
- ✓ IL Inlays aimed for both dual cards and pure contactless cards
- ✓ CB Card Body manufacturing
- ✓ ICC Integrated Circuit Card, Embedding of the chip-module into the card body
- ✓ PICC Lamination of the chip-inlays with plastic sheets for pure contactless cards
- ✓ P Card Personalization

4.2 Communication Technologies (Contact, Contactless, dual)

The CQM label identifies the assessed activity regarding the card interface technology (Contact, Dual, Contactless).



4.3 Approval vs Recognition

CQM Recognition is a 6-month maximum interim period applied for:

- New Companies applying for CQM
- Any new production activity for a CQM certified company

CQM Approval is granted to the vendor when Smart Consulting assesses the audit as a PASS based on the audit report recommendations.

4.4 Label Structure

CQM label is an identifier; its structure is "ACCLTTTTS".

A = Activity of manufacturing

CC = Company

LL = Location of the manufacturing site

TTTT = Interface Technology (Contact, Dual, Contactless)

S = Status (R: Interim label for Recognition, A: Label for Approval)

5 CQM Certificate

5.1 Certificate Prerequisites

Smart Consulting will issue the CQM Certificate to the Vendor assuming that:

- All due audit(s) reports(s) are available
- Next 12 months audit plan is available
- Yearly audit fees are paid

5.2 Labels listed into the Certificate

The certificate lists all the labels for a company or a group of companies.

The certificate does not list any CQM recognition labels.

All sites that are GVCP registered for a company, or a group of companies, are listed in the same CQM certificate regardless of the granted labels.

5.3 Certificate Validity

The CQM certificate is valid for a maximum of 12 months. Validity may be less to leverage corrective action completion (C grade).

Please refer to the grade definition section.

5.4 Certificate Delivery

The certificate is an Acrobat “.pdf” file digitally signed by Mastercard and supplied by Smart Consulting. The recipients can print it locally.

5.5 Certificate Example



**Card Quality Management
Statement of Quality**
Easy Cards Ltd
 Having its principal place of business at
 Tokyo bd, 155
 9871 Taipei, TAIWAN

has submitted for approval by Mastercard a number of Smart Cards Products and Services in conformity with the Mastercard Card Quality Management (CQM) Requirements. The following CQM labels have been granted.

Location	Chip			Integrated Circuits Modules			Inlay		Plastic Card Body		Chip Embedding		Card + Inlay Lamination	Personalization		
	Contact	Dual	C-less	Contact	Dual	C-less	Dual	C-less	Contact	Dual	Contact	Dual	C-less	Contact	Dual	C-less
TW	Taipei								37903000CA	37903000DA	47903000CA	47903000DA		P7903000CA	P7903000DA	P7903000PA
US	New York													P7902000CA	P7902000DA	P7902000PA
DE	Berlin								3A501000CA	3A501000DA	4A501000CA	4A501000DA	77904000PA	FA501000CA	FA501000DA	P7904000PA

Mastercard
Enterprise Security Solutions
EMV & Digital Devices

Bruno Parfum
Product Approvals Director

This letter is valid until May 28, 2019

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