

Mastercard Card Quality Management (CQM) Overview February 2025



Agenda



1	Introduction
2	Audits
3	Labels
4	Process
5	Others

CQM Scope



Involved products:

Mastercard EMV cards (ID-1 format)

Involved companies:

- Suppliers of the card vendors (chip, modules, inlays, sensors, plastic card bodies)
- > Card manufacturers
- > Personalization bureaus

Requirements:

- Quality management
- > Product conformity
- > Product quality

Methodology:

- Self-assessment controlled by audits
- Corrective actions plan related ton nonconformities
- > Actions completion check

CQM Requirements



Interoperability

Conformity to physical, mechanical, magnetic, electrical, contactless requirements to meet interoperability with ATM and POS terminals.

Reliability

Resistance to mechanical, chemical, magnetic, electrostatic, aging stress.

Security

UV print, opacity, hologram, signature panel conformity.

Brand

Mastercard design rules conformity.

Environment

No toxicity.

CQM Benefits



For the manufacturer

- ✓ Cost reduction (less rework, less defects)
- ✓ Manufacturer reputation
- ✓ Suppliers modular approach
- ✓ Suppliers and subcontractors higher quality
- ✓ Bank tenders compliance
- ✓ External independent view
- ✓ Corporate quality tool to support and control the remote sites

For the bank

- ✓ POS and ATM inter-operability
- ✓ EMV compliance
- ✓ Mastercard compliance
- ✓ Less card replacement
- ✓ Card-holder satisfaction

CQM Documents



- Overview (this presentation)
- Certification Process
- Registration Form
- List of accredited Auditors
- Assessment Plan (quality questionnaire)
- Requirements specification
- Non Disclosure Agreement (NDA) template

These documents are publicly available on: https://cqm.smart-consulting.com
Your documentation system shall point this CQM webpage to ensure that your company is working with the last release of the documents.

Mastercard Approval Overview

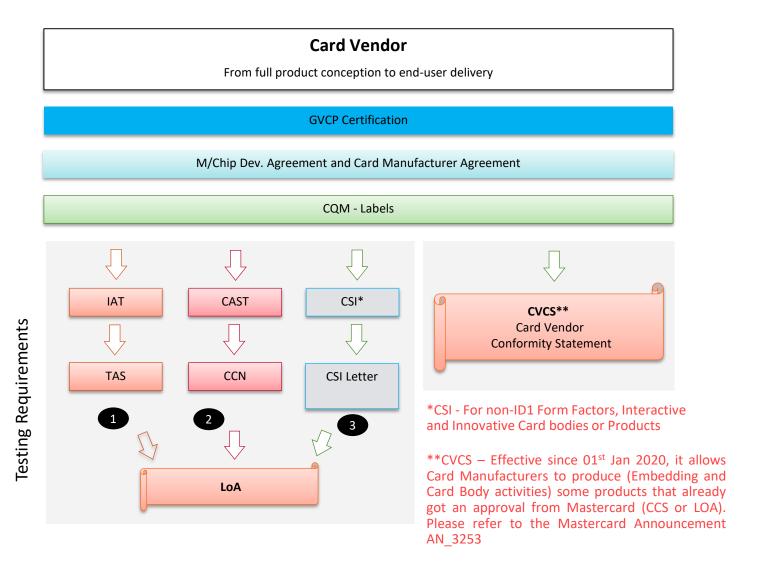


	Company Program	Product Program
Global Vendor Certification Program "Physical and Logical Security"	GVCP GVCP-helpdesk@mastercard.com	
Brand and Card Design Rules		Card Design card_design@mastercard.com
Card Structure Integrity and security "Innovative form factors or card bodies"		CSI CSI_Security@mastercard.com
Card Quality Management CQM cqm@smart-consulting.com		
Compliance And Security Testing		CAST cast@mastercard.com
Card Approval		IAT chip_certification_chd@mastercard.com

Source: Mastercard

Card Approval 1/2





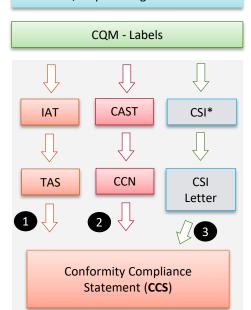
Card Approval 2/2



Module Supplier

Chip + Operating System + Payment App

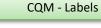
M/Chip Dev. Agreement

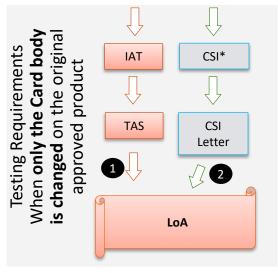


Card Supplier

End-user product manufacturing and delivery based on an approved 'Module + Inlay'

GVCP Card Manufacturer and OEM Agreement







**CVCS – Effective since 01st Jan 2020, it allows Card Manufacturers to produce (Embedding and Card Body activities) some products that already got an approval from Mastercard (CCS or LOA). Please refer to the Mastercard Announcement AN_3253

*CSI - For non-ID1 Form Factors, Interactive and Innovative Card bodies or Products

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Accredited Auditors



List is available to https://cqm.smart-consulting.com

Audit Findings



- ✓ **Major non-conformity**Product functionality might be compromised leading to potential field rejects.
- ✓ Minor non-conformity Others
- ✓ Recommendation Identified issue that should be resolved to reduce the risk of NC. Auditor leaves the decision to the Vendor if the Vendor wants to resolve/implement it

Audit Outcome



Quality Rank	Explanation	Due Action Plan Completion	Next audit
Α	Pass with limited number of minor NC*	< 4 months	< 3 years
В	Pass with limited number of major NC*	< 4 months	< 2 years
С	Interim Pass	< 4 months	< 1 year
D	Fail		ASAP after action plan completion

*NC stands for Non-Conformity

Starting from the 3rd audit per site, a C grade will lead to a FAIL (decertification)

For exceptional remote audits refer to next slide

Remote Audits



On-site audits might be replaced by remote audits under exceptional conditions <u>upon prior Smart Consulting's agreement</u>

Specific Assessment Process

It is available on request to the auditor. It requires additional paperwork preparation.

Interval between 2 subsequent audits.

The previous slide depicts the maximum time between two subsequent on-site audits. If the audit is performed remotely, the next one will have to be carried out sooner than if it was carried out on-site.

Rank

- Unlike on-site audits, rank can only improve by 1 step from the previous audit.
- Unlike on-site audits, the best result from an initial audit is C regardless of the number of non-conformities .

Audit Timeline



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

^{*} Typical values. They shall be defined inside the bilateral Audit Agreement binding on the Auditor and the Auditee

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Label = CQM Identifier



Labels are granted to a CQM certified company, to identify their certified activity, in a given site. CQM label structure is "ACCLLRRPTS" where:

- A = Activity of manufacturing
- CC = Company
- LL = Location of the manufacturing site
- RR = Reserved for future use
- P = Chip Packaging (0 = with Module (Legacy), 1 = without, 2 = both)
- T = Interface Technology (Contact, Dual, Contactless)
- S = Status (R:interim label for Recognition, A:label for Approval)

Manufacturing activities

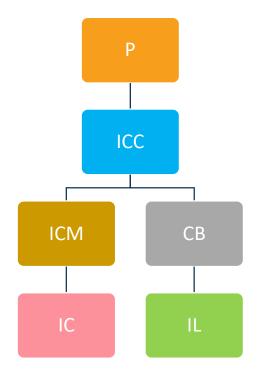


Accronym	First label digit	Definition
IC	1	Integrated Circuit (EMV Chip).
ICM	2	Integrated Circuit Module (IC module with contacts).
СВ	3	Card Body.
ICC	4	Integrated Circuit Card (Card with an IC).
BSM	5	Bio Sensor Module (i.e. fingerprint).
IL	6	Inlay with antenna, it is inserted in the Card Body.
iac-ICM	7	Inter-Active Card specific Integrated Circuit Module.
iac-IL	8	Inter-Active Card specific Inlay
IAC	9	Inter-Active Card, ICC with connection to fingerprint sensor or display card.
Р	Р	Card personalization.

Manufacturing activities

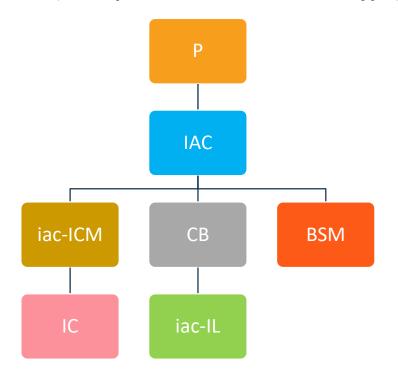


Classic card
(Typical modular construction)



There are very rare exceptions to this modular construction approach

InterActive Card (Example of one construction type)



Interactive cards have non-standard construction steps that differ from "classic" cards.

They are subject to specific additional labels: iacIL, iacICM, IAC and BSM (for fingerprint cards)

Recognition Vs Approval (Label last digit)



Recognition

CQM Recognition is a 6 months max interim period aimed

- for companies starting the CQM process
- for a new activity started by a CQM certified company

The interim labels are granted to start production until the CQM audit. The exact committed audit date and the self-assessment plan shall be communicated to both the auditor and Smart Consulting.

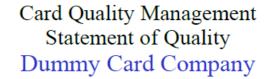
Approval

CQM Approval is the step achieved when the audit pass recommendation is confirmed by Smart Consulting.

Certificate



Page 1 of 2



Having its principal place of business at

Shanghai Avenue, 1929 012345 Shenzhen, CHINA

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.

Country Code	City (+ subcontractor name if any)	Integrated Circuit	Integrated Circuit Module	IAC Integrated Circuit Module	Bio Sensor Module (fingerprint)	Inlay	IAC Inlay	Card Body	IC Card	Inter Active Card	Perso
CN	SHENZHEN							39902000DA	49902000DA		P9902000DA
PT	PORTO					69901000DA					
US	BOSTON, MA									99903000DA	

Mastercard Cyber and Intelligence Solutions

This letter is valid until May 5th 2024

Bruno Parfum Product Approvals Director



The certificate is listing the labels granted to all the sites of a company.

Refer to Process document available to https://cqm.smart-consulting.com

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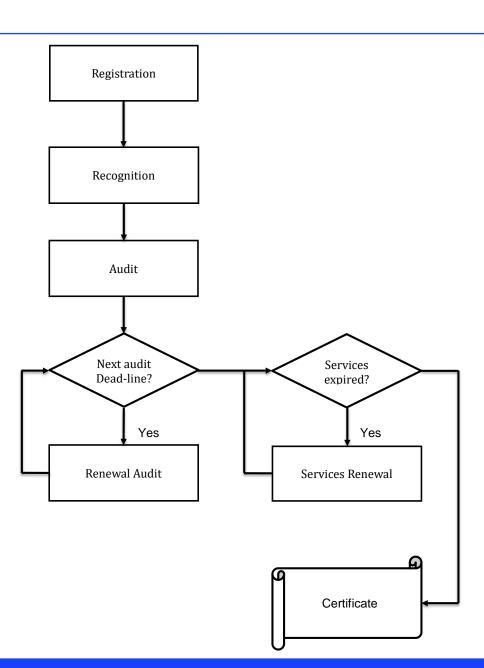
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Refer to Process document available to https://cqm.smart-consulting.com

Newcomer Vs. Already Certified



Newcomer

To save time, register for CQM right away, along with Mastercard GVCP registration.

 CQM labels require the related GVCP certification for card manufacturers or perso bureaus

Already Certified

The audit date shall be initiated by the auditee directly with the auditor taken into account.

- The audit deadline issued by Smart Consulting while acknowledging the previous audit report.
- The auditor availability in the region

Certification payments must be paid as soon as possible to receive the new certificate before the current one expires and to avoid any potential administrative issues.

Notify changes in real time the auditor and Smart consulting if:

- new primary contact
- company name change
- new manufacturing activities
- new manufacturing location

Contact the soonest cqm@smart-consulting.com

Negotiate the audit date directly with <u>the auditor</u> **AS SOON AS POSSIBLE**, as the auditor may be already committed with many other clients for a significant period.

Certificate is granted after



- All due audit(s) report(s) are received
- ➤ All due corrective actions for audits older than 4 months are completed and assessed by the auditor
- ➤ Next 12 months audit(s) schedule is agreed by Smart Consulting
- Annual fees are paid to Smart Consulting

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CQM Operations



Waterloo, August, 17 2009 Note to the attention of: Card Vendors, Subcontractors to Card Vendors and Personalization Bureaus MasterCard Worldwide has decided to outsource Card Quality Management (CQM) operations to the company Smart Consulting SARL. Starting at the date of this letter Smart Consulting becomes the primary contact for CQM. Fees will be invoiced directly by Smart Consulting. Should you have any question, please contact: Smart Consulting E-mail: cqm@smart-consulting.com direct tel. intl + 33 607 955 441 2 rue Vignol 13600 La Ciotat France MasterCard E-mail: cqm@mastercard.com Best Regards, Christian Delporte, Head of Chip Engineering MasterCard Worldwide Innovative Platforms 198a Chaussée de Tervuren 1410 Waterloo BELGIUM

The CQM scheme is owned by Mastercard (Certification Authority)

The CQM operations are performed by Smart Consulting (Certification Body)



	Auditor Audit Cost	Smart Consulting Annual fees
Prices	~ 1500 € per day + Travel & Expenses	1185 € per company (*) + 670 € per activity (*)
Payment term (new candidates)	Defined by the auditor	60 days after CQM offer date
Payment term (already certified)	Defined by the auditor	60 days before certificate birthday

(*) = tariff for year 2025 Non negotiable Subject to yearly adjustment in relation with inflation rate.

Conclusion



Mastercard mandates CQM

for all Mastercard EMV cards with ID1 format for all Mastercard EMV cards manufacturing steps

CQM certified companies list is public for card manufacturers and personalization bureausrefer to Mastercard "Certified Vendors List"
available to Mastercard web site https://www.mastercardconnect.com updated every month by GVCP

Increasing numbers of bank tenders are mandating CQM

Contacts



https://cqm.smart-consulting.com

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smart-consulting.com

https://www.linkedin.com/company/smart-consulting/