PD ISO/TS 12812-4:2017

BSI Standards Publication

Core banking — Mobile financial services

Part 4: Mobile payments-to-persons

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National foreword

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Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **2**

3 Terms and definitions **2**

4 Abbreviated terms **3**

5 Specific characteristics for mobile payments-to-persons **3**
- 5.1 General 3
- 5.2 Mobile payments-to-persons concepts 3
- 5.3 User expectations 4
- 5.4 Stakeholders involved in a mobile payments-to-persons program 4
  - 5.4.1 Mobile financial service provider 4
  - 5.4.2 Mobile network operator 4
  - 5.4.3 Agent 4
  - 5.4.4 Electronic money service provider 4

6 Requirements for mobile payments-to-persons **5**
- 6.1 General 5
- 6.2 Device, network, and application selection requirements 5
  - 6.2.1 General 5
  - 6.2.2 Requirements 5
- 6.3 Logging requirements 6
  - 6.3.1 General 6
  - 6.3.2 Requirements 6
- 6.4 Notice requirements 6
  - 6.4.1 General 6
  - 6.4.2 Requirements 6
- 6.5 Authentication and authorization requirements 7
  - 6.5.1 General 7
  - 6.5.2 Requirements 7

7 Scenarios for interoperability **7**
- 7.1 General 7
- 7.2 Scenario for interoperability 1 7
  - 7.2.1 General 7
  - 7.2.2 Three-corner model 8
  - 7.2.3 Four-corner model 8
- 7.3 Scenario for interoperability 2 (cross-system payment) 8
- 7.4 Interoperability models for payment facilitation 9
  - 7.4.1 General 9
  - 7.4.2 Direct interoperability model 9
  - 7.4.3 Common infrastructure 10

8 Implementation models **11**
- 8.1 General 11
- 8.2 High-level architecture and network technologies 11
  - 8.2.1 Layer 1: Infrastructure used to convey payment initiation and authorization messages 11
  - 8.2.2 Layer 2: Common infrastructure used for payment facilitation 12
  - 8.2.3 Layer 3: Value transfers and funds movement 12
- 8.3 Classification of mobile payments-to-persons 12
  - 8.3.1 General 12
  - 8.3.2 Mobile credit transfer payment 13
  - 8.3.3 Mobile card payment 13

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Full document details: PD ISO/TS 12812-4:2017

8.3.4 Electronic money transfer ... 13
8.4 Mobile remittances ... 13
8.5 High-level description for significant use cases ... 14
8.5.1 General ... 14
8.5.2 Mobile payments-to-persons by card ... 14
8.5.3 Payments-to-persons by credit transfer ... 16

9 Detailed payments-to-persons transaction flows ... 20
9.1 General ... 20
9.2 Models for the processing of mobile payments-to-persons ... 20
9.3 Bank-centric payments-to-persons models ... 21
9.3.1 Split payment over the ACH system ... 21
9.3.2 Bank-centric single payment over the ACH system consortium model ... 23
9.4 Non-bank-centric models ... 25
9.4.1 General ... 25
9.4.2 Three-corner non-bank-centric methods funded by non-bank account ... 26
9.4.3 Split non-bank centric model funded by bank account ... 27
9.4.4 Three-corner non-bank-centric single model funded by bank account ... 29
9.5 Card-based payments ... 30
9.5.1 Processing functionalities ... 30
9.5.2 Detailed transaction flow ... 30

Annex A (informative) **Financial inclusion for mobile payments-to-persons ... 33**

Annex B (informative) **Intra-jurisdictional versus inter-jurisdictional aspects for mobile payments-to-persons ... 35**

Bibliography ... 36

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 68, *Financial services*, Subcommittee SC 7, *Core banking*.

A list of all the parts in the ISO 12812 series can be found on the ISO website.

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Introduction

The ISO 12812 series is a multi-part standard addressing interoperable and secure systems for the provision, operation and management of Mobile Financial Services (MFSs).

This document addresses how a payer interacts with a person to initiate and complete a mobile payment. A "person" can be either a natural individual or a small business entity legally recognized as a "person" but where the payment is casual in nature (e.g. where the purpose is to transfer funds between people who know each other, such as family members, friends or neighbours, or where the relationship between two people is casual, such as to pay the babysitter, nanny, handyman, etc.).

Payment instruments used for mobile payments-to-persons are rendered by appropriate MFS applications that are available in or accessed through a mobile device. This mobile device, using an appropriate secure environment, stores or provides access to sensitive data. Such sensitive data include application configuration information, personal account data and user authentication data (authentication credentials), including cryptographic keys.

This document includes a set of requirements and some recommendations intended to facilitate the interoperability of mobile payments-to-persons. This document also outlines the need for consumer protection mechanisms (e.g. including fair contract terms, rules on transparency of charges, clarification of liability, complaints mechanisms and dispute resolution).

The objective of this document is to provide MFSPs with technical provisions to enable the development of interoperable mobile payments-to-persons services, where either the payer or the payee uses a mobile device to transact a payment to a person.

Mobile payments-to-persons may require the payer to input a unique identifier of the payee. The payee of a mobile payments-to-persons transaction (e.g. family member, friend) should be able to verify the received amount and the reason for the payment. Although the standard focuses on mobile payments-to-persons resulting in account-to-account payments, mobile payments-to-persons systems have also been deployed in scenarios where payer and/or payee are unbanked. From a wider perspective, then mobile payments-to-persons and especially remittances may facilitate later financial inclusion (see Annex A).

This document differentiates between proximate mobile payments-to-persons and remote mobile payments-to-persons:

— Proximate mobile payments-to-persons refers to a payment conveyed from one mobile device to another mobile device, where the payer and the payee are physically present in the same location. In this document, such mobile devices are assumed to enable a contactless or other communication channel to be established. One example is the Near Field Communication Interface (see ISO 18092), present on an NFC-enabled Mobile Device. NFC technology in the mode called peer-to-peer establishes such a contactless channel between the two communicating devices. This document does not preclude the use of other proximity technologies like (e.g. bluetooth low energy, QR codes).

— Remote mobile payments-to-persons refers to payments in which both the payer and the payee may be not physically present at the same location, meaning that the mobile device establishes a communication channel using a wireless network.

Regarding the implementation of mobile payments-to-persons, the following factors should be considered:

— Technology innovation is dynamic, especially for mobile devices and their operating systems, mobile wallets and payment infrastructures. Thus, requirements should be flexible to handle current and future technologies.

— Regulatory and policy issues should be addressed for the operation of payment systems by ensuring conformance with national and multi-national legislation and regulation, (e.g. Know Your Customer (KYC), Anti-Money Laundering (AML), the U.S. Office of Foreign Assets Control (OFAC) and Combating the Financing of Terrorism (CFT), data protection/privacy and customer protection).

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— Global utilization of mobile payments-to-persons in the two following areas:

a) The deployment of mobile devices in developing countries that are often challenged by geographical boundaries, a lack of a centralized banking infrastructure, and a need for the provision of MFS to under-banked and/or unbanked individuals.

b) Social networks are used by millions or even billions of people in systems relying on interpersonal services (e.g. music, games, relationships). Many of these services generate direct payments-to-persons relationships which may involve the use of mobile payments-to-persons.

Mobile payments-to-persons constitute one type of MFS. The contents of this document are closely related with other parts of the standard. Potential implementers of mobile retail payment solutions should look at part 5. Both parts 4 and 5 of ISO 12812 seek to support all possible technologies and are not intended to favour any specific technology. Therefore, individual implementations of a mobile payments-to-persons service may be highly dependent upon or require the application of other parts of the ISO 12812 standard. In particular:

— ISO 12812-1 describes the general framework and definitions for the standard;

— ISO 12812-2 specifies requirements and recommendations for security and data protection;

— ISO 12812-3 specifies requirements and recommendations for the management of mobile financial applications.

Figures 1 to 6 or part thereof are courtesy of the European Payments Council.

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Core banking — Mobile financial services —

Part 4: Mobile payments-to-persons

1 Scope

This document provides comprehensive requirements and recommendations, as well as specific use cases for implementation of interoperable mobile payments-to-persons.

The emphasis is placed on the principles governing the operational functioning of mobile payments-to-persons systems and processes, as well as the presentation of the underlying technical, organizational, business, legal and policy issues, leveraging legacy infrastructures of existing payment instruments (see ISO 12812-1:2017, Annex C).

This document includes the following items:

a) requirements applicable to mobile payments-to-persons;

b) recommendations regarding mechanisms involved in the operation of interoperable mobile payments-to-persons;

c) a description of the different use cases for mobile payments-to-persons;

d) a generic interoperability model for the provision of different mobile payments-to-persons;

e) recommendations for the technical implementation of the generic architectures for the mobile payments-to-persons program;

f) recommendations for mobile remittances;

g) use cases with the corresponding transaction flows;

h) discussion of the financial inclusion of unbanked and underbanked persons (Annex A);

i) some legal aspects to consider for mobile payments-to-persons (Annex B).

The document is structured as follows:

— Clause 6 sets forth the requirements that a mobile payments-to-persons program must comply with.

— Clauses 7, 8 and 9 provide the different levels of implementation for the interoperability of mobile payments-to-persons.

— Clause 7 describes the interoperability principles for mobiles payments-to-persons.

— Clause 8 describes:

  1) a three-layer high-level architecture for mobile payments-to-persons programs;

  2) payments instruments sustained by these programs;

  3) processing details for a series of significant use cases of mobile payments-to-persons using these payment instruments.

— Clause 9 provides a step-by-step data flow description for different mobile payments-to-persons implementations: bank-centric, non-bank centric and card-centric. They can be mapped into the

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processing use cases of Clause 8, where abstraction is made in the nature of the payment service providers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12812–1, *Core banking — Mobile financial services — Part 1: General framework*

ISO 12812–2:2017, *Core banking — Mobile financial services — Part 2: Security and data protection for mobile financial services*

ISO 12812–5, *Core banking —Mobile financial services — Part 5: Mobile payments to businesses*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12812-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
agent
entity that transfers funds to an MFSP on behalf of the payer or disburses funds from an MFSP to the payee

Note 1 to entry: The definition applies especially to remittance and covers both three- and four-corner systems.

3.2
mobile payments to person
mobile payment where the payee is a person

3.3
mobile remittance
transfer of money through mobile device between two persons located or not in the same country

3.4
mobile remittance service provider
entity that provides a mobile remittance service

3.5
mobile payments-to-persons program
operational network, governed by laws, rules and technical specifications, standards, providing mobile payments-to-persons services

3.6
payee identifier
information enabling a MFSP to identify the beneficiary of a mobile payments-to-person

3.7
unbanked
individual who does not have access to a bank account or who has no contract with a financial institution for banking services

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4 Abbreviated terms

ACH	Automatic Clearing House
AML	Anti-Money Laundering
BIC	Business Identifier Code
CFT	Combating the Financing of Terrorism
CI	Consumers International
CSM	Clearing and Settlement Mechanism
IBAN	International Bank Account Number
KYC	Know Your Customer
MFS	Mobile Financial Service
MFSP	Mobile Financial Service Provider
MNO	Mobile Network Operator

5 Specific characteristics for mobile payments-to-persons

5.1 General

The content in this clause is generic in nature and can be applied across a wide variety of mobile payments-to-persons. The objective is to contribute to a common understanding on how the various mobile payments-to-persons programs work.

Together, the different sections of this clause propose a flexible framework for mobile payments-to-persons programs which includes:

— functional and technical commonalities between different mobile payments-to-persons as classified in Clauses 8 and 9;

— functional architectures suitable to mobile payments-to-persons;

— provisions to cover regional requirements and/or constraints, in particular, those of a legal or regulatory nature.

5.2 Mobile payments-to-persons concepts

Depending upon the nature of the mobile payments-to-persons system, the transfer may involve any combination of:

— a deposit account or a credit account associated with the payer and/or the payee;

— an agent accepting from the payer or disbursing to the payee funds through a variety of methods, including cash;

— electronic money held by the payer or payee, either resident in a server or stored in a mobile device using an appropriate secure environment (see ISO 12812-2).

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5.3 User expectations

The next list (not exhaustive) precises some expectations of users (payers and payees) of mobile payments-to-persons systems:

a) payee availability of funds at all times;

b) easy to use service;

c) quick transfer and confirmation;

d) increasingly seek transferability of funds with persons enrolled by different MFSPs;

e) resistance against attacks (theft, skimming, etc.);

f) transparency of charges;

g) clarification of liability;

h) availability of complaint and dispute resolution mechanisms.

5.4 Stakeholders involved in a mobile payments-to-persons program

5.4.1 Mobile financial service provider

The MFSP contracts the customer for a mobile payments-to-persons service provided in the framework of an MFS program. An MFSP directly operates the mobile payments-to-persons service or may subcontract some elements of the program to a third party.

A primary role of the MFSP is the issuance of mobile payments-to-persons applications to be used during the transaction. The MFSP also implement risk prevention and technical controls that ensure the security of the transaction in conformance with the rules of the MFS program. In particular, the MFSP controls the access to mobile payments-to-persons services to their enrolled customers using authentication mechanisms.

An open MFS program involves at least one business agreement between two or more different MFSPs in order to offer customers services according to mutually contracted governance rules (see ISO 12812-1:2017, B.3).

NOTE In this document, the acronym MFSP refers to a “payments-to-persons MFSP”.

5.4.2 Mobile network operator

The MNO operates the wireless network that may be required to proceed to a mobile payments-to-person transaction. The MNO provides access to the network after authenticating the user. The MNO may also act as the distribution channel for the mobile device and associated authentication means.

5.4.3 Agent

The agent is the entity entitled by contract with an MFSP to disburse cash to the payee (cash-out) or to accept cash (cash-in) from a payer to proceed to a mobile payments-to-person to a designated payee. An agent may be a regulated entity.

5.4.4 Electronic money service provider

The electronic money service provider is an entity (that may be regulated based on national laws or regulations) that is authorized to issue and exchange electronic money between their customers.

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6 Requirements for mobile payments-to-persons

6.1 General

This clause identifies a set of requirements that are common to both proximate and remote mobile payments-to-persons.

These requirements are similar to those covering the payments to a business environment. Where in particular receipt delivery is needed, printed or in electronic form, the requirements of ISO 12812-5 apply.

A mobile payments-to-person transaction involves typically an initial connection between the mobile device of the payer and an MFSP after the selection of an application by the payer. Upon the payer authentication and the retrieval of payee's routing information, the MFSP of the payer establishes a second connection with the MFSP of the payee to instruct the payment.

The requirements set out in this clause shall apply to:

— the implementation of the mobile payments-to-persons application;

— the protocols executed between the MFSPs involved in the transaction, as well as to the protocols between the payer/payee and their MFSP. In particular, these protocols shall convey data needed to conform to 6.3, 6.4 and 6.5.

NOTE Security and data protection requirements are addressed in ISO 12812-2.

6.2 Device, network, and application selection requirements

6.2.1 General

These requirements are intended to ensure that a customer has the freedom to choose under certain conditions the mobile device and MNO for access to MFSs that will be used.

6.2.2 Requirements

6.2.2.1 An MFSP shall permit customers (e.g. payer or payee) to select the mobile device they desire for the access to the mobile payments-to-persons service, provided that the mobile device supports a secure environment compatible with the MFSP requirements and is consistent with ISO 12812-2.

6.2.2.2 An MFSP shall facilitate the selection of the MNO which the customer desires to handle mobile communications services, provided that the MNO supports a secure environment compatible with the MFSP requirements.

6.2.2.3 A mobile device shall permit a customer to:

— select the appropriate mobile payments-to-persons application(s) including a mobile wallet, for handling any particular mobile payments-to-persons transaction;

— permit a customer to disable an MFS application (see ISO 12812-3:2017, 7.1).

6.2.2.4 An MFSP shall ensure that when a mobile wallet is used for mobile payments-to-persons, it is capable of providing, at least, the following functionality:

— a trusted user interface to:

a) manage (register, update, delete) data that may be used for the service;

b) allow the user to select and use the payments-to-persons service (can be one interface managing all payment means or different interfaces for different means);

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— a data repository (on the mobile device or a secure remote server).

6.3 Logging requirements

6.3.1 General

These requirements are intended to facilitate the traceability of transactions and enable the customer to verify that these transactions have been performed correctly.

6.3.2 Requirements

6.3.2.1 An MFSP shall provide the means for a customer to view details of each mobile payment transaction. The transaction log shall, at a minimum, display the last 10 transactions handled by a mobile payments-to-persons application, or the recent transactions completed over the past 30-day period, whichever provides the most information. Beyond the immediate logging information, the MFSP shall arrange to provide additional information to a customer upon request under reasonable terms.

6.3.2.2 The transaction log shall make available the following data:

— transaction identifier;

— transaction date;

— transaction time;

— transaction amount(s);

— transaction currency code(s);

— transaction type (e.g. debit, credit);

— payee/payer information (e.g. name/device identifier and location);

— transaction verification/integrity information (e.g. cryptogram).

NOTE A parallel requirement to provide a transaction log to a payee may not be practical because the payee can be a customer of a different MFSP.

6.4 Notice requirements

6.4.1 General

These requirements are intended to:

— reduce the risks and consequences of unauthorised or incorrectly executed payment transactions so that the payer and the payee may inform their MFSPs as soon as possible about any contestations concerning allegedly unauthorised or incorrectly executed payment transactions, and

— accelerate the availability of the funds by the payee.

6.4.2 Requirements

6.4.2.1 The payer MFSP shall notify a payer that a payment has been authorized, approved, or completed.

6.4.2.2 The payee MFSP shall notify the payee about the status of a payment (e.g. that a payment has been received into the payee's account).

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