

Electronic Funds Transfer at Point Of Sale (EFT-POS) — Conceptual framework —

Part 2: Guide to EFT-POS system
description

Committees responsible for this Draft for Development

The preparation of this Draft for Development was entrusted to Technical Committee IST/17, Identification cards and related devices, upon which the following bodies were represented:

- Ailec Associates
- APACS (Barclays Bank)
- APACS (Girobank)
- APACS (Midland Bank)
- APACS (Nat West Bank)
- Association for Payment Clearing Services (APACS)
- BT Laboratories
- Cellnet
- Consumer Policy Committee of BSI
- EDS (Scicon Ltd.)
- Electricity Association
- GEC Card Technology
- HMSO
- Rochford Thompson Equipment
- Thorn EMI Electronics
- Vodafone Ltd.
- Westinghouse Cubic Ltd.
- News Datacom Ltd.

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Foreword

This Draft for Development was originally prepared by the BSI Technical Committee on EFT-POS: IST/30, Electronic funds transfer at point of sale.

The Committee (then OIS/30) was set up in June 1987 in order to progress a comprehensive programme of standards work to support the EFT-POS application. It was a multi-disciplinary group with membership drawn from retailers, suppliers, financial institutions, government, information technology (IT) test facilities, software houses, and consumers.

OIS/30 was established as a separate Technical Committee to ensure that EFT-POS standards work was not split between several groups who would assign different priorities to separate parts of an overall EFT-POS application.

It is believed that the harmonization of standards will enable EFT-POS to develop in a coherent manner, taking into account the interests of all parties within a framework of secure financial integrity.

A dual approach was adopted to the development of EFT-POS standards. One strand was the drafting of detailed specifications. These were based heavily on existing commercial practice and were aimed directly at the procurement of interworking EFT-POS system components in the UK. The second strand was the development of a basis for current and future EFT-POS standardization in the UK and internationally and has resulted in this Draft for Development.

The work programme of IST/30 is now largely complete and responsibility for EFT-POS standards has passed to IST/17, which has responsibility (among others) for UK participation in, and action on the results from, CEN TC 224, the European standards committee for EFT-POS.

Terminology and conventions are based on the relevant standards of ISO/TC 68, Banking and related financial services and ISO/IEC JTC 1, Information technology.

This publication is not to be regarded as a British Standard.

The two Parts are being issued in the Draft for Development series of publications and are of a provisional nature because they aim, as described, to provide a methodology, framework and basis within which developing EFT-POS facilities can be coordinated. They should be applied on this provisional basis, so that information and experience of their practical application may be obtained.

A review of this Draft for Development will be carried out not later than 2 years after its publication. Notification of the start of the review period, with a request for the submission of comments from users of this two Part Draft for Development, will be made in an announcement in the appropriate issue of *BSI News*.

According to the replies received, the responsible BSI Committee will judge whether the Draft for Development can be converted into a British Standard or what other action should be taken.

Observations which it is felt should receive attention before the official call for comments will be welcomed.

These should be sent to the Secretary of BSI Technical Committee IST/17 at BSI, 389 Chiswick High Road, London W4 4AL.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Introduction

The purpose of this Draft for Development, which is published in two Parts, is to provide a common framework for the coordination of standards development for EFT-POS, and to provide a common reference for maintaining consistency between the standards developed for different applications of EFT-POS. This Draft for Development does not specify how to implement EFT-POS, but provides a framework with sufficient flexibility to accommodate advances in technology and commercial developments.

The objectives of this Draft for Development are as follows.

- a) To provide a methodology and terminology which allows EFT-POS requirements to be stated in a clear and unambiguous fashion.
- b) To provide a framework within which specific EFT-POS standards can be built and the relationships between those standards can be defined to ensure integrity of their combined operation.
- c) To provide a coordinated basis for essential areas of EFT-POS standardization, such as data flow, data elements and messages.

The two Parts of the Draft for Development describe the conceptual framework for Electronic Funds Transfer at Point of Sale (EFT-POS). EFT-POS is a card-based system which enables customers to make payments for goods and services, either over the counter, or at unattended ticketing or vending machines and, in due course, from home. This concept is taken to include refunds. The withdrawal of cash is taken as being part of goods and services for the purposes of this Draft for Development.

EFT-POS is therefore initiated by an agreement between the cardholder and acceptor to a transaction involving the transfer of goods and services. The data relating to the transaction are captured at the point of sale and the EFT-POS process results in changes, reflecting the value of the transaction, to the balances on the accounts of the cardholder and acceptor. The transfer of funds and supply of goods and services which follow the balance changes are outside the scope of this Draft for Development.

Part 1 of DD 219 defines the entities, roles and facilities required to support EFT-POS and establishes the associated data elements. It provides an overview and is intended to be read by all those concerned with EFT-POS systems, whether of a technical or commercial background.

This Part of DD 219 gives guidance on how to describe specific EFT-POS systems, in terms of the entities, roles and facilities that comprise them, together with the messages required for them to operate. It is a more detailed document primarily intended for a more specialized audience.

This Draft for Development makes no assumptions about the particular form of commercial and contractual agreements made to supply EFT-POS. The commercial relationships may be direct or established through agencies.

Any EFT-POS standard should support technical interoperability, whilst allowing for differing technology, style of implementation or configuration. This Draft for Development is intended to ensure that any specific EFT-POS standard can conform to these requirements, to facilitate national and international interoperability. This Draft for Development is not an implementation specification.

The development of the two Parts of DD 219 can be summarized as follows.

- 1) A descriptive approach was established that clearly distinguishes between the principal entities participating in any card-based payment system.
- 2) The commercial relationships between principal entities were analysed in terms of the roles, relationships and links which can be established.
- 3) A set of facilities was defined which support the EFT-POS roles.
- 4) The information was identified which is required by the principal entities to support the facilities.

1 Scope

This Part of DD 219 gives guidance on how to compose an EFT-POS system description. Such a description provides a unique, unambiguous reference to that system, differentiating it from other EFT-POS systems.

The description comprises a number of components of the EFT-POS system, ranging from the business purpose in terms of the entities involved, through to the messages which have been defined to support the particular system.

It may be judged appropriate at some future point to establish procedures for common registration of such system descriptions. The responsibilities of any registration authority which would accept and maintain registrations are defined in Annex A.

Annex B gives an example system description using the APACS 50 components of BS 7788.

Annex C gives an example system specification using the APACS 30 components of BS 7788.

2 References

2.1 Normative references

This Part of DD 219 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this Part of DD 219 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies together with any amendments.

2.2 Informative references

This Part of DD 219 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Part of DD 219, the definitions given in DD 219-1 apply, together with the following.

3.1 data element¹⁾

a unit of data which in a certain context is indivisible

3.2 EFT-POS system description

a textual description of a particular EFT-POS system drafted in accordance with this Part of DD 219

3.3 event

the external change(s) by which users of an EFT-POS system enter and retrieve information and which cause the system to perform some pre-planned response

NOTE For the purposes of this Part of DD 219, such a response is the transfer of a sequence of messages.

3.4 registration

submission of a particular EFT-POS system description, acceptance of the submission in accordance with the agreed registration scheme, and assignment of an unambiguous identifier to the submitted EFT-POS system description

3.5 registration scheme

a process where particular registration procedures are applied

3.6 registration authority

a body recognized by BSI to execute the registration scheme

NOTE Annex A lists the procedures that the registration authority would have to apply, such as receiving applications for registration and maintaining a register of successful applications on an open basis.

3.7 registration procedures

the specified procedures for performing registration and amending or deleting existing registrations

4 EFT-POS system description

4.1 Description components

An EFT-POS system description should consist of the components listed in Table 1. It is essential that all of the components are included.

NOTE Table 1 summarizes the information required. Each clause referenced in the table expands on the table entries.

4.2 Description reference

The following information should be included in the description reference.

- a) The title and scope of the system, together with a description of the unique attributes of the system.
- b) The originator, date and version number of the EFT-POS system description being submitted.

4.3 EFT-POS entities

The description should state which of the EFT-POS entities defined in clause 8 of DD 219-1:1995 are present. The system description should utilize these entities in accordance with their roles as defined in DD 219-1.

¹⁾ Repeated from BS ISO 2382-4.

Table 1 — EFT-POS system description: components

Component	Information required	Clause reference
Description reference	Title, Scope, Description, Originator, Date, Version reference.	4.2
EFT-POS entities	Defined entities supported in this system. New entities introduced and defined.	4.3
Entity relationship model	Show all relationships between all entities indicated in 4.3.	4.4
Entities and keys	Definition of key(s) for each entity, together with registration procedures appropriate to each key.	4.5
Roles	Definition of the roles to be undertaken by the entities.	4.6
Facilities	Defined facilities supported in this system. New facilities introduced and defined.	4.7
Messages	Reference or copy of the message definitions used.	4.8
Message flow sequence	Indicates the sequence of message flow.	4.9
Data element usage	Characteristics of each data element.	4.10
System description	General description of system.	4.11

Any additional or further entities of this EFT-POS system should be defined. The entity definition should be given in a format compatible with those given in DD 219-1. Where any new terms are introduced, they should also be defined.

NOTE Examples of additional (further) entities definitions are given in items i) to vi) of B.3.2.

The organizations corresponding to the entities in the system description should be identified, together with references to the business agreements supporting the relationships between entities.

4.4 Entity relationship model

An entity relationship model should be included showing the relationship(s) of all the entities present in the system except, where only part of a system is being defined, entities outside that part of the system may be omitted. The entity relationship model given in DD 219-1 is applicable to all EFT-POS system descriptions, unless a modified entity model is necessary. A modified model should show any new entities and their relationships. Where entities defined in DD 219-1 are shown, their relationships should not be modified from those defined in DD 219-1.

4.5 Entities and keys

Instances of an entity can be uniquely identified through particular values of key information. For each of the entities, both those defined in DD 219-1 and those specific to the EFT-POS system being described, the key values should be stated.

Entity	Key description	Registration structure	Enquiry/Directory facilities	Associated data elements

For each key, the following information should be included:

- a) *entity*: the entity to which the key applies;
- b) *key description*: a description of the purpose of the key;
- c) *registration structure*: the registration structure (if any) established to support the key described;
- d) *enquiry/directory facilities*: whereby allocated values can be looked up;
- e) *associated data elements*: the list of data elements associated with this entity and key.

4.6 Roles

DD 219-1 defines how roles may be allocated to principal entities in order to explicitly assign responsibility for the actions and procedures which the entity may carry out.

A set of facilities need to be defined to support the roles. The facilities defined in DD 219-1 are those associated with the roles of funds guarantee and financial transfer.

Where a system description refers to facilities defined in Part 1, the roles have already been defined therein. Where new facilities are to be defined, it is recommended that the relevant roles be defined.