A Joint Standard of AASHTO, ITE, and NEMA

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Transit Communications Interface Profiles

part of the National Transportation Communications for ITS Protocol

Standard on Fare Collection (FC) Business Area Objects

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In February 1997, the TCIP Technical Working Group organized subgroups to standardize the business area data interface objects. In March 1997, the TCIP TWG created the Fare Collection Subgroup to standardize Fare Collection business data interface objects. The result was this document.

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- Federal Highway Administration
- Federal Transit Administration

FOREWORD

This document uses only metric units.

This document is an NTCIP Device Data Dictionary Standard. Device Data Dictionary Standards provide definitions of data elements for use within NTCIP and TCIP systems.

The TCIP family of standards addresses Advanced Public Transportation Systems (APTS) data interfaces, and related automated transit tools and data. The standards also address the business requirements of the APTS data interfaces. In some cases, specialized terms were needed to define general classes of information. For example, different business areas needed to define data elements related to time, date and footnotes. Special data types were developed so that these data concepts were consistent across business areas, while specific needs were met. These data types are defined in this document.

For more information about NTCIP standards, visit the NTCIP Web site at http://www.ntcip.org. For a hardcopy summary of NTCIP information, contact the NTCIP Coordinator at the address below.

In preparation of this NTCIP document, input of users and other interested parties was sought and evaluated. Inquires, comments, and proposed or recommended revisions should be submitted to:

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Approvals

This document was separately balloted and approved by AASHTO, ITE, and NEMA after recommendation by the Joint Committee on the NTCIP. Each organization has approved this standard as the following standard type, as of the date:

AASHTO – Standard Specification; December 2000
ITE – Software Standard; May 2001
NEMA – Suggested Standard for Future Design; May 2001

History

From 1998 to 1999, this document was referenced as ITE ST-ITS-TCIP-FC and/or NEMA TS 3.TCIP-FC. However, to provide an organized numbering scheme for the NTCIP documents, this document is now referenced as NTCIP 1408. The technical specification of NTCIP 1408 is identical to the former reference, except as noted in the development history below:

ST-ITS-TCIP-FC version 01.0, March 1999. April 1999 – Standards Development Report Attachment A listed changes from draft v0.4 to v1.0. May 1999 -- User Comment Draft accepted by the Joint Committee on the NTCIP. June 1999 – NTCIP Standards Bulletin B0037 requested user comments on NTCIP 1408.

NTCIP 1408 version 01.00, March 1999. November 1999 – Recommended Standard accepted by the Joint Committee on the NTCIP. February 2000 – No additional changes reported to v01.00. May 2000 – NTCIP Standards Bulletin B0053 requested ballot to approve. Approved by AASHTO in December 2000, approved by ITE in May 2001, and approved by NEMA in May 2001.

NTCIP 1408 v01.01, December 31, 2001. October 2001 – Reformatted for printing: incremented version number and updated date; added and revised front matter; updated references to NTCIP and NEMA document numbers in Clause on References; updated references to ITE document numbers; inserted introduction text in Section on Requirements; deleted Annex A Comment Form; and inserted introduction text in Annex for the ASN.1 Script.

INTRODUCTION

This document defines the Fare Collection objects that are supported by the Transit Communication Interface Profiles (TCIP). This document and the other TCIP documents describe the “transit” functional area data elements and messages of the National Transportation Communication for ITS Protocol.

There are two annexes to this document.

This document defines requirements that are applicable to all NTCIP and TCIP environments and also contains optional and conditional clauses that are applicable to specific environments for which they are intended.

The following keywords apply to this document: AASHTO, ITE, NEMA, NTCIP, TCIP, Fare Collection.

In 1992, the NEMA 3-TS Transportation Management Systems and Associated Control Devices Section began the effort to develop the NTCIP. Under the guidance of the Federal Highway Administration’s NTCIP Steering Group, the NEMA effort was expanded to include the development of communications standards for all transportation field devices that could be used in an Intelligent Transportation Systems (ITS) network.

In September 1996, an agreement was executed among AASHTO, ITE, and NEMA to jointly develop, approve, and maintain the NTCIP standards.

In 1997, the ITE, in cooperation with the American Public Transit Association (APTA), the U.S. DOT’s Federal Transit Administration, and the U.S. DOT’s FHWA, began development of the TCIP. The TCIP Technical Working Group was accepted as a subdivision of the Joint Committee on the NTCIP.

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CONTENTS

Section 1
GENERAL

1.1 SCOPE

The fare collection domain covers the data needs for the functions related to fare policies, and selling, collection, processing, and accounting of fares from passengers. The business area also includes data needs related to the monitoring and maintenance of equipment related to the selling, collection, and processing of fare media. This includes input and output data from fare selling and/or collection devices and functions such as:

- Data to be contained on any type of fare instrument, including a transit pass;
- Data necessary to define any type of fare structure;
- Location and operational information necessary to process the fare, including on-board vehicle identification;
- Data that defines the health and status (i.e., maintenance information) of the fare transaction unit itself;
- Data necessary to be transmitted from the fare processing unit to the fare media, such as remaining credit, debit, cash value (e.g., smart card);
- Data necessary to support transit planning, accounting, and other purposes;
- Data necessary to extend control over the Fare Transaction Unit equipment; and
- Data necessary to manage and monitor point of sale systems (includes on-line/cash register objects).

Moreover, dialog processes or sequences of message groups are defined which prescribe the exchange of information between devices or systems.

Only portions of this function are represented in the National Architecture; those functions include the use of electronic payment methods, fare structure information communicated to information service providers, and, in some cases, the exchange of financial reports (e.g., credit card numbers and transactions) between financial institutions and the transit management system.

1.2 REFERENCES

For approved amendments, contact:

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For draft amendments of this document, which are under discussion by the relevant TCIP Working Group, and recommended amendments of the NTCIP Joint Committee, visit the World Wide Web at http://www.ntcip.org or http://www.ite.org.

A copy of the database containing the TCIP data elements and messages for each of the business areas is available. To download a copy of the TCIP database, follow the instructions on either the NTCIP or ITE Websites.

Two types of references are cited in this section. Normative references contain provisions that apply when implementing this standard. Informative references contain rules and guidelines which may provide

a more detailed understanding of the data, interface, format, profiles, or application of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standard listed below.

1.2.1 Normative References

NTCIP 1400, formerly referenced as ST-ITS-TCIP-FRAME, Transit Communications Interface Profile Framework, Version 1.2. Institute of Transportation Engineers, August 10, 1998.

NTCIP 1401, formerly referenced as ST-ITS-TCIP-CPT, Transit Communications Interface Profile, Standard on Common Public Transportation Objects, Version 1.1. Institute of Transportation Engineers, July 31, 1998.

NTCIP 1404, formerly referenced as ST-ITS-TCIP-SCH, Transit Communications Interface Profile, Standard on Scheduling/ Runcutting Objects, Version 1.1, Institute of Transportation Engineers, July 31, 1998.

ISO/IEC 8824:1994, Abstract Syntax Notation One (ASN.1).

1.2.2 Informative References

Draft IEEE P1489/D0.0.7, Draft Standard for Data Dictionaries for Intelligent Transportation Systems, Version 0.0.7, October 9, 1997.

Draft IEEE P1488/D0.0.6, Draft Standard for Message Set Template for Intelligent Transportation Systems, Version 0.0.6, October 17, 1997.

The National Architecture for ITS, U.S. Department of Transportation Joint Program Office, January 1997.

1.2.3 Contact Information

The American National Standards Institute (ANSI), as the U.S. representative to the ISO/IEC International Standards organizations, maintains a register of all ISO/IEC standards. ANSI may be contacted at:

ANSI
11 West 42nd Street, 13th Floor
New York, New York 10036
(212) 642-4900

The National Electrical Manufacturers Association (NEMA), the American Association of State Highway and Transportation Officials (AASHTO) and the Institute of Transportation Engineers jointly develop, approve, and maintain the NTCIP standards. The standards may be obtained through:

National Electrical Manufacturers Association
1300 North 17th Street, Suite 1847
Rosslyn, VA 22209-3801
(703) 841-3200
www.nema.org

The Institute of Electrical and Electronics Engineers (IEEE) develops and maintains the IEEE Standard for Data Dictionary and Message Set Template for Intelligent Transportation Systems. These draft standards may be obtained from IEEE at:

Institute of Electrical and Electronics Engineers

445 Hoes Lane, P.O. Box 1331
Piscataway, NJ 08855-1331
(732) 981-0060
www.ieee.org/ieeestore

The Intelligent Transportation Society of America (ITSA) distributes documents developed by the U.S. DOT Joint Program Office (JPO) on ITS. The National System Architecture may be obtained from ITSA at:

Intelligent Transportation Society of America
400 Virginia Avenue, S.W.
Suite 800
Washington, DC 20024-2730
(202) 484-4584
www.itsa.org/public/archdocs/national.html

or from Odetics at:

www.odetics.com/itsarch/

Section 2
TERMINOLOGY

For the purposes of this document and as part of an effort to standardize terminology used within the transit industry, the following definitions, abbreviations, acronyms, conventions and notations used in this document apply to this document.

2.1 DEFINITIONS

Fare Collection Unit	A component that receives/"takes in" value from a fare instrument or the patron by calculating the cost of the service. The fare collection unit also validates the fare media.
Fare Instrument	A type of media that represents data or stores information related to value, rides, time, etc.
Fare Media	Media that is used for storing or purchasing a fare, ride, or service from a public transportation agency.
Fare Processing Unit	A component which dispenses rides to customers.
Fare Transaction Unit	A system that sells or processes fare media.
Financial Institution	An institution operated, partnered or authorized by a public transportation agency to handle its financial affairs. Keywords: Bank.
Financial Transaction Authorization Clearinghouse	A system that processes (i.e., approves or denies) financial transactions.
Internal Configuration System	A system that supports the selling or processing of fare instruments.
Internal Secure System	A system that records all transactions and events related to the selling, processing or monitoring of the fare transaction unit.
Point of Sale	A component that issues or adds value to fare instruments.

2.2 ABBREVIATIONS

Desc	Description
Equip	Equipment
Fac	Facility
FI	Fare Instrument
Hrs	Hours
ID	Identification
Max	Maximum
Min	Minimum
No or Num	Number
Veh	Vehicle

2.3 ACRONYMS

ADA	Americans with Disabilities Act
APTS	Advanced Public Transportation System
ASN.1	Abstract Syntax Notation One
DD	Data Dictionary
FC	Fare Collection
FCU	Fare Collection Unit
FI	Fare Instrument
FPU	Fare Processing Unit
FTA	Federal Transit Administration

FTAC	Financial Transaction Authorization Clearinghouse
FTU	Fare Transaction Unit
ICS	Internal Configuration System
ISS	Internal Secure System
MST	Message Set Template
POS	Point of Sale
PTV	Public Transportation Vehicle
ROW	Right-of-Way
SC	Smart Card
SCH	Scheduling and Runcutting
TCIP	Transit Communications Interface Profile

Section 3
BASIC CONCEPTS

3.1 FARE COLLECTION (FC) BUSINESS AREA

The Fare Collection domain covers the data exchange requirements related to the processing (selling and collection) of fares from passengers. This includes all input and response data needed to process any form of electronic payment (e.g., fare structures, fare instrument parameters) and output data from fare collection units (e.g., status, health, maintenance).

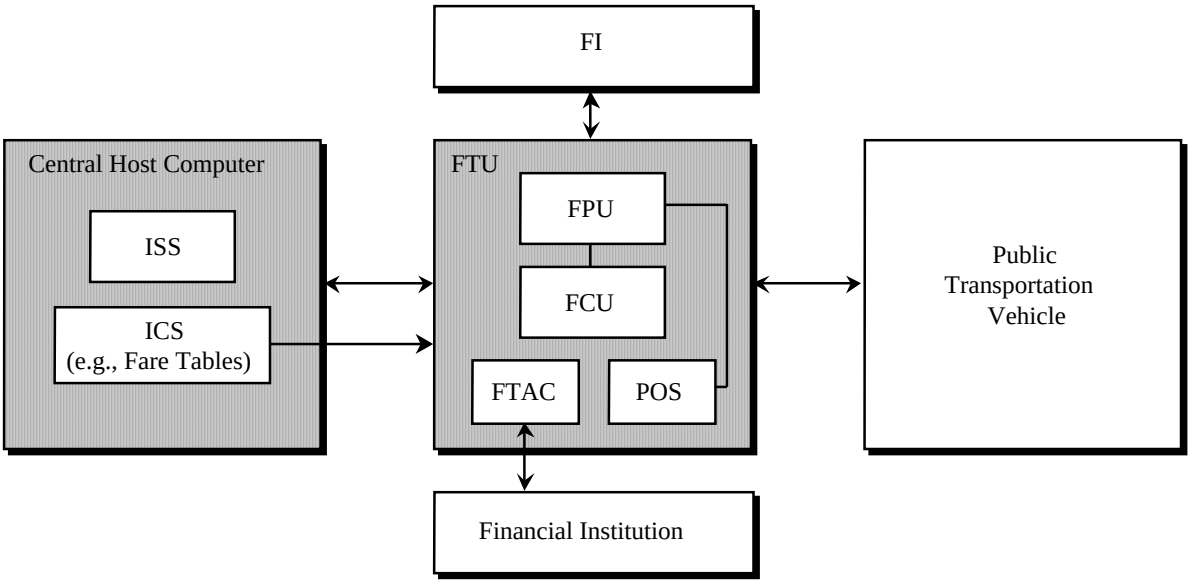
3.2 COMPONENTS AND DATA FLOWS

There is an increasingly large range of solutions, methods and equipment for fare selling and/or collection in public transportation. There are traditional fare systems, as well as an ever growing range of technologically sophisticated techniques such as electronic purse, remote payment, integrated funds management systems, and more which will coexist for a long while with the traditional systems. The various data elements and messages for the fare collection domain attempt to capture the evolving nature of these complex implementations and support the next generation technologies as well. Therefore, the fare collection business area includes the following general flows:

- Fare instrument (FI) to/(from) fare transaction unit (FTU)
- Fare transaction unit to/from fare transaction monitoring functions (reporting/accounting, status, security, health, and maintenance) (e.g., transit vehicle and central host computer).
- Fare tables function to/from other Transit functions (e.g., Scheduling, Passenger Information, Administrative functions)
- Fare tables and other transit assets (e.g., routes, bus stops, policies) to fare transaction unit (via public transit vehicle or central host computer)

These flows are illustrated in Figure 4.1, Fare Collection Conceptual Architecture.

Figure 4.1 Fare Collection Conceptual Architecture



(FI)	Fare Instrument	(FTU)	Fare Transaction Unit	(ICS)	Internal Configuration System
(FPU)	Fare Processing Unit	(POS)	Point of Sale	(FTAC)	Financial Transaction Authorization Clearinghouse
(FCU)	Fare Collection Unit	(ISS)	Internal Secure System		

3.3 CLASSIFICATION SCHEME

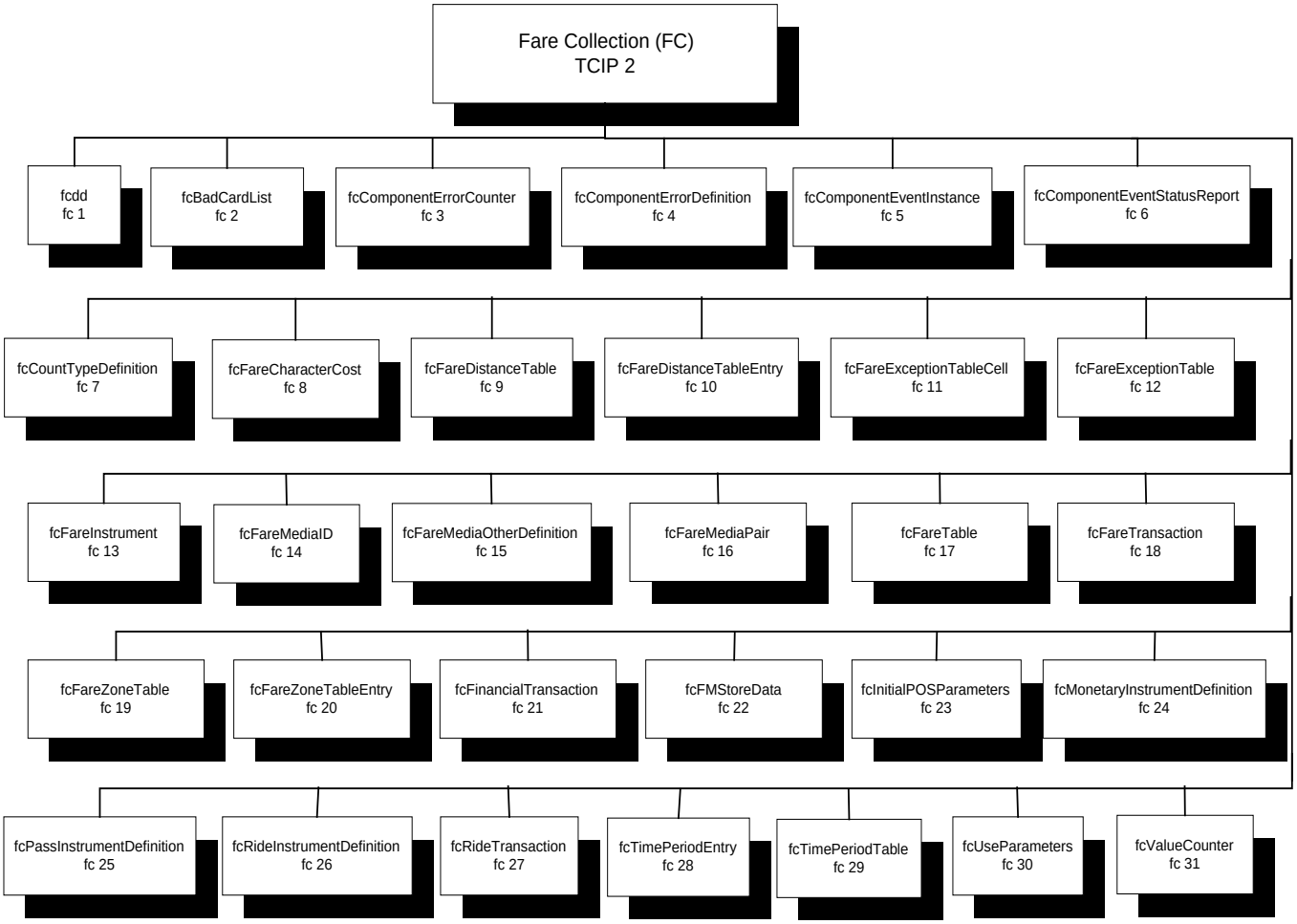
3.3.1 National Architecture Classification Scheme

Fare collection falls into the Financial (Level 1), Transit (Level 2), Fare Collection (Level 3) categories of the National Architecture Classification as described in the Framework document and the IEEE P1489 V.0.7, Annex A.

3.3.2 TCIP Classification Tree

The fare collection business area classifies fare collection into the data dictionary node and multiple messages and/or business objects. Figure 4.2 illustrates the hierarchy. The naming conventions for this business area are derived from the classification. Specifically, business objects such as FcFareExceptionCell and FcFareMediaPair are only used by their parent nodes, that is, the nodes that generate them: FcFareExceptionTable and FcBadCardList, respectively. Also, the key which references the dependent business object is called an “index,” whereas, the key which references the parent business object is called “ID.” For example, the reference of a FcFareExceptionCell is called FC-FareExceptionIndex, whereas, the FcFareExceptionTable is referred to as FC-FareExceptionTableID.

Figure 4.2 TCIP Classification Scheme for FC



Section 4
REQUIREMENTS

4.1 DATA DICTIONARY

This section defines those data dictionary elements which are expected to be used by Fare Collection implementations of business objects. The objects are described in terms of the IEEE 1489. The objects are presented in the order of their appearance on the FC classification tree.

Descriptive Name	FC_AccountID_nbr
Descriptive Name Context	ITS
Definition	The account or customer identification. This data element may be included on the fare media
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 1
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-AccountID
Value Domain	
Data Type	IDENL
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_AgencyReserveCode_txt /UCS
Descriptive Name Context	ITS
Definition	A field to be defined by the agency for its own use particularly as an encryption key.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 2
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-AgencyReserveCode
Value Domain	UCS
Data Type	OCTET
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	OCTET SAMPLE (SIZE(1..40))
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_BadCardID_nbr
Descriptive Name Context	ITS
Definition	Identification of fare media of which the validity has been canceled temporarily or permanently, due to loss of the media, technical malfunction, no credit on bank account, offenses committed by customer, etc.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 3
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-BadCardID
Value Domain	
Data Type	IDENL
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ComponentErrorDescription_txt /UCS
Descriptive Name Context	ITS
Definition	The description of a class of errors that may occur in a fare collection device.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 4
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentErrorDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ComponentErrorType_cd
Descriptive Name Context	ITS
Definition	A type of error that may occur in a component, subassembly or piece of equipment in a processing unit.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 5
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentErrorType
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - bill accept 2 - bill count 3 - bill escrow 4 - bill operation 5 - bill stacker 6 - card read (1st try) 7 - card read (2nd try) 8 - card read (3rd try) 9 - card reject 10 - card write 11 - coin accept 12 - coin count 13 - coin operation 14 - power loss 15 - feed 16 - transport 17 - printer 18-149 reserved 150-245 local use

	246-255 error codes
Valid Value Rule	codes 150-246 shall be associated with fcEquipmentErrorTypeDescription
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	**0**

Descriptive Name	FC_ComponentErrorTypeID_nbr
Descriptive Name Context	ITS
Definition	A number which identifies a type of error with the equipment from whence it comes.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 6
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentErrorTypeID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ComponentEventID_nbr
Descriptive Name Context	ITS
Definition	A numeric representation of the status of a component being reported.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 7
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentEventID
Value Domain	
Data Type	IDENS
Representation Class Term	
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ComponentEventType_cd
Descriptive Name Context	ITS
Definition	A numeric representation for a report on the status of a fare collection component.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	Only 125 slots are available for local use codes. Vendors are encouraged to submit event types to the TCIP FC Working Group as a standard code.
External Name	fcdd 8
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentEventType
Value Domain	
Data Type	INTEGER
Representation Class Term	
Valid Value Range	
Valid Values List	1 - voltage dropout 2 - voltage restored 3 - probe started 4 - probe completed 5 - cashbox removed 6 - cashbox restored 7 - cashbox door timeout 8 - cashbox opened in service 9 - insufficient fare accepted 10 - coinbox 75% full 11 - coinbox full 12 - currency box 75% full 13 - currency box less than 75% full 14 - currency box full 15 - card/pass box 75% full 16 - card/pass box less than 75% full 17 - card/pass box full 18 - coin de-jam operated 19 - farebox set in manual bypass 20 - farebox reset to automatic mode 21 - pass/transfer jam 22 - pass/transfer jam cleared 23 - pass currency jam 24 - maintenance access - in service 25 - maintenance access - out of service 26 - alarm module failure 27 - battery failure 28 - battery low

29 - card capture bin 75% full
30 - card capture bin full
31 - Fare card stock type 1 is low
32 - Fare card stock type 1 is out
33 - Fare card stock type 2 is low
34 - Fare card stock type 2 is out
35 - Fare card stock type 3 is low
36 - Fare card stock type 3 is out
37 - Fare card stock type 4 is low
38 - Fare card stock type 4 is out
39 - Fare card stock type 5 is low
40 - Fare card stock type 5 is out
41 - Fare card stock type 6 is low
42 - Fare card stock type 6 is out
43 - Equipment controller board clock error
44 - Coin acceptor fault
45 - Loss of communications with local devices
46 - Maintenance door open
47 - Maintenance door closed
48 - Motion sensor alarm triggered
49 - Power reset
50 - Local station communications lost
51- Receipt low
52 - Receipt out
53 - credit/debit failure (out of service)
54 - gate failure (turnstile and parking)
55 - bank note validation failure
56 - 65399 reserved
65400 - 65525 local use
65526 - 65535 error codes

Valid Value Rule

Internal Representation Layout

Internal Layout Max Size 65535

Internal Layout Min Size 0

Descriptive Name	FC_ComponentID_nbr
Descriptive Name Context	ITS
Definition	A unique number assigned by the transit agency used to identify a component or piece of equipment.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 9
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ComponentStatusType_cd
Descriptive Name Context	ITS
Definition	A numeric representation of the operational state of a component.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 10
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentStatusType
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - In-service 2 - Out of service 3 - Maintenance mode 4 - Freewheel mode (no pay) 5 - Diagnostic mode 6 - Alarm triggered 7 - Gate mode open for entry only 8 - Gate mode open for exit only 9 - Gate mode open for entry/exit 10-149 reserved 150-245 local use 10-150 246-255 error codes
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_ComponentType_cd
Descriptive Name Context	ITS
Definition	Specific equipment used in collecting, processing, vending fare media.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 11
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentType
Value Domain	
Data Type	UBYTE
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - Farebox (fare collection unit) 2 - Fare media reader (validator) 3 - Ticket vending machine 4 - Turnstile 5 - Other 6-255 reserved
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ComponentTypeDescription_txt /UCS
Descriptive Name Context	ITS
Definition	The description of fare collection, vending or processing equipment. This field is required when fcEquipmentType code "other" is used.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 12
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ComponentTypeDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_CountTypeDescription_txt /UCS
Descriptive Name Context	ITS
Definition	The description of a component or subassembly that counts the number of fare instrument transactions. The definition of the "transaction" is described in this data element.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 13
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-CountTypeDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_CountTypeID_nbr
Descriptive Name Context	ITS
Definition	A unique number assigned by an agency which identifies a definition of the number of transactions of a subassembly or component.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 14
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-CountTypeID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ExpirationDateTime_tm / ANSI/ISO 9899:1990
Descriptive Name Context	ITS
Definition	The day on which a fare instrument can no longer be used. The instrument expires on this date regardless of whether the instrument contains value.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 15
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ExpirationDateTime
Value Domain	ANSI/ISO 9899:1990
Data Type	DATETIME
Representation Class Term	time
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareCharacterCostIndex_nbr
Descriptive Name Context	ITS
Definition	A unique reference to a cell in a fare table that assigns a fare (monetary or ride value) for a specific public transportation service. The service is characterized by rider classification, service type, mode, time period, point/point or zone/zone, and fare instrument used.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 16
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareCharacterCostIndex
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareCost_amt / ISO 4217
Descriptive Name Context	ITS
Definition	The cost (in currency) of a fare for transit service
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 17
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareCost
Value Domain	ISO 4217
Data Type	ULONG
Representation Class Term	amount
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareDistanceIndex_nbr
Descriptive Name Context	ITS
Definition	A unique number that corresponds to a cell in a fare distance table. The index identifies an origin and destination stop point ID pair.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 18
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareDistanceIndex
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareDistanceTableID_nbr
Descriptive Name Context	ITS
Definition	A unique number assigned by a public transporation agency to a table that contains origin-destination stop point id pairs.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 19
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareDistanceTableID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareDistanceType_cd
Descriptive Name Context	ITS
Definition	The type of point to point distance that is specified. Line of sight refers to the straight line distance between two points; linear distance is the distance traveled along a linear network between two points (e.g., Main station via Elm street to Oak stop).
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 20
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareDistanceType
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - line of sight 2 - linear 3-149 reserved 150-245 local use 246-255 error codes
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_FareExceptionCellIndex_nbr
Descriptive Name Context	ITS
Definition	A unique number that corresponds to a cell in a table of fare exceptions.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 21
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareExceptionCellIndex
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareExceptionTableID_nbr
Descriptive Name Context	ITS
Definition	A unique number assigned to a table which defines exceptions to the standard fare policy for transit service.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 22
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareExceptionTableID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareInstrumentID_nbr
Descriptive Name Context	ITS
Definition	A number which identifies a specific type of fare instrument and possibly its rider characteristics.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 23
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareInstrumentID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareMediaID_nbr
Descriptive Name Context	ITS
Definition	A unique number assigned as a suffix to each fare instrument identifier (FC-FareInstrumentID) which is assigned by a financial authority (e.g., transit agency) and recognized as payment for transit services.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	Card Identification
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 24
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareMediaID-nbr
Value Domain	
Data Type	IDENL
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareMediaID_txt
Descriptive Name Context	ITS
Definition	A unique character string assigned as a prefix to each fare instrument identifier (FC-FareInstrumentID) which is assigned by a financial authority (e.g., transit agency) and recognized as payment for transit services.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 25
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareMediaID-txt
Value Domain	UCS
Data Type	UTF8String
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	aa, where a represents a character.
Internal Layout Max Size	2
Internal Layout Min Size	2

Descriptive Name	FC_FareMediaOtherDescription_txt /UCS
Descriptive Name Context	ITS
Definition	The description of an exception to fare instruments other than monetary, ride and pass.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 26
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareMediaOtherDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareMediaOtherID_nbr
Descriptive Name Context	ITS
Definition	A unique identifier associated with a fare instrument which does not fall into monetary, ride or pass categories. (This may include an employee or retired identification card.)
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 27
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareMediaOtherID
Value Domain	
Data Type	UBTYE
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareTableID_nbr
Descriptive Name Context	ITS
Definition	A unique number assigned to a table which defines the fares for transit service.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 28
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareTableID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareTimeValue_qty /SI-time
Descriptive Name Context	ITS
Definition	The duration (in days) over which a pass instrument has value.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 29
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareTimeValue
Value Domain	IEEE/ASTM SI 10-1997 : time
Data Type	USHORT
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	The units are in hours.
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareZoneIndex_nbr
Descriptive Name Context	ITS
Definition	A unique number that corresponds to a cell in a fare zone table. The index identifies an origin and destination zone pair.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 30
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareZoneIndex
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FareZoneTableID_nbr
Descriptive Name Context	ITS
Definition	A unique number assigned by a public transportation agency to a table that contains origin-destination zone pairs.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 31
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FareZoneTableID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FinancialTransactionID_nbr
Descriptive Name Context	ITS
Definition	A unique number that identifies a financial transaction.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 33
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FinancialTransactionID
Value Domain	
Data Type	IDENL
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FinancialTransactionType_cd
Descriptive Name Context	ITS
Definition	Lists the types of financial transactions.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 33
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FinancialTransactionType
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1- Money received 2 -Money dispensed 3 -Electronic - credit 4 -Electronic - debit 5 -Smart card 6 -Combo (split payment) 7-Transit check 8-149 reserved 150-245 local use 246-255 error codes
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_FinancialTransactionTypeDescription_txt /UCS
Descriptive Name Context	ITS
Definition	A description of the type of financial transaction.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 34
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FinancialTransactionTypeDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_FIStandard_cd
Descriptive Name Context	ITS
Definition	A list of standards related to financial instruments. This list includes electronic and non-electronic fare instruments.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 35
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-FIStandard
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - none 2 - ISO 8583:1993 (parts 1-3) 3 - ISO 4909:1987 4 - ISO 9992:1990 (parts 1 and 2) 5 - VEI:1997 6-149 reserved 150-245 local use 246-255 error codes
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_Footnote_txt/UCS
Descriptive Name Context	ITS
Definition	A comment related to fare policy.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 36
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-Footnote
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_MonetaryInstrumentAuthority_cd /ISO 4217
Descriptive Name Context	ITS
Definition	A list of authorities and global currencies as specified by a 3 character ISO 4217 currency code or six character CPT-AgencyID. The ISO 4217 format includes a two character country code based on ISO 3166 plus a one-character currency designator.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 37
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-MonetaryInstrumentAuthority
Value Domain	ISO 4217, CPT-AgencyID
Data Type	UTF8String
Representation Class Term	code
Valid Value Range	
Valid Values List	
Valid Value Rule	Character VALUE
Internal Representation Layout	UTF8String (SIZE(1..6))
Internal Layout Max Size	6
Internal Layout Min Size	

Descriptive Name	FC_MonetaryInstrumentDescription_txt /UCS
Descriptive Name Context	ITS
Definition	A physical description of the cash or fare instrument. This includes size (e.g., dimensions, diameter), color, monetary value and compliance with the specific magnetic stripe standard.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 38
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-MonetaryInstrumentDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_MonetaryInstrumentType_cd
Descriptive Name Context	ITS
Definition	The physical type of Monetary Instrument.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 39
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-MonetaryInstrumentType
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - bill 2 - coin 3 - token 4 - ticket 5 - debit "money is in acct and transfered to acct; external to the transit agency" 6 - stored value "prepaid cash; internal cash instrument issued by property" 7 - charge "federal institution extends credit" 8 - hybrid 9 - transit check 10 - check card 11 - 155 reserved 156 - 255 local use
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_MonetaryInstrumentTypeID_nbr
Descriptive Name Context	ITS
Definition	An identification number associated with a type of monetary instrument used for fare payment. Cash (bills and coins), tokens and tickets may be assigned an identifier.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 40
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-MonetaryInstrumentTypeID
Value Domain	
Data Type	UBYTE
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_MonetaryInstrumentValue_amt /ISO 4217
Descriptive Name Context	ITS
Definition	The monetary value of the currency based on one hundredth of the currency designator. Token, ticket, and pass are based on the currency of the country in which the agency resides.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	The default is in US dollars.
External Name	fcdd 41
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-MonetaryInstrumentValue
Value Domain	ISO 4217
Data Type	ULONG
Representation Class Term	amount
Valid Value Range	
Valid Values List	
Valid Value Rule	Units are in hundredths of currency value.
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_MonetaryValueRemaining_qty /ISO 4217
Descriptive Name Context	ITS
Definition	The monetary value remaining on a fare media after the transaction is completed. The monetary authority and currency is specified by FC-MonetaryInstrumentID. The default value is in US dollars
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 42
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-MonetaryValueRemaining
Value Domain	ISO 4217
Data Type	ULONG
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	Units are in hundredths of currency value
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_NumberOfRiders_qty
Descriptive Name Context	ITS
Definition	The number of riders who use the same fare media for a given customer trip.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 43
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-NumberOfRiders
Value Domain	
Data Type	UBYTE
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_PassInstrumentDescription_txt /UCS
Descriptive Name Context	ITS
Definition	The description of the pass instrument.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 44
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-PassInstrumentDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_PassInstrumentID_nbr
Descriptive Name Context	ITS
Definition	A fare instrument which contains unlimited number of rides over a period of time, e.g., monthly, weekly and daily passes.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 45
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-PassInstrumentID
Value Domain	
Data Type	UBYTE
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_PassInstrumentType_cd
Descriptive Name Context	ITS
Definition	A list of pass instrument types.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 46
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-PassInstrumentType
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - Magnetic stripe 2 - Flash pass 3 - Transit check 4 - Smart card 5-255 reserved
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_PassValue_tm/SI : [hrs]
Descriptive Name Context	ITS
Definition	The valid duration in hours of a pass instrument. (Maximum time period is one year.)
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 47
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-PassValue
Value Domain	SI
Data Type	USHORT
Representation Class Term	time
Valid Value Range	
Valid Values List	
Valid Value Rule	0..8544
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_PrinterPosition_nbr
Descriptive Name Context	ITS
Definition	The position on the fare media on which a printer recorded this transaction or this set of FcUseParameters.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 48
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-PrinterPosition
Value Domain	
Data Type	UBYTE
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RideInstrumentDescription_txt /UCS
Descriptive Name Context	ITS
Definition	A physical description of the fare instrument.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 49
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RideInstrumentDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RideInstrumentID_nbr
Descriptive Name Context	ITS
Definition	An identification number associated with a type of fare instrument used for fare payment. The value of the instrument is based on the number of rides (versus cash value).
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 50
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RideInstrumentID
Value Domain	
Data Type	UBYTE
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RideInstrumentType_cd
Descriptive Name Context	ITS
Definition	The physical type of the Fare Instrument.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 51
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RideInstrumentType
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - token 2 - ticket 3 - pass/fare card 4 - transit check 5-155 reserved 156-255 local use
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_RiderClassDescription_txt /UCS
Descriptive Name Context	ITS
Definition	The decription of a rider classification. This data element is required when local use codes are used for FC-RiderClassification.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 52
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RiderClassDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RiderClassification_nbr
Descriptive Name Context	ITS
Definition	A means of classifying the types of riders on public transportation vehicles.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 53
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RiderClassification
Value Domain	
Data Type	INTEGER
Representation Class Term	number
Valid Value Range	
Valid Values List	1 – regular 2 – senior 3 – child 4 – student 5 – youth 6 - ADA customer 7 - promotional 8 - employee 9 - retired employee 10 - public assistance customer 11-155 reserved 156-255 local use
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_RidersOnFareInstrument_qty
Descriptive Name Context	ITS
Definition	The number of riders who used the fare instrument to enter an access point (or PT vehicle) 'at the same time.'
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 54
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RidersOnFareInstrument
Value Domain	
Data Type	UBYTE
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RidersOnFIMax_qty
Descriptive Name Context	ITS
Definition	The number of riders who are allowed to enter a PT stop point (or vehicle) at the same time and using the same fare media.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 55
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RidersOnFIMax
Value Domain	
Data Type	UBYTE
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	127 (FFFFx) indicates unlimited
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RideValue_qty
Descriptive Name Context	ITS
Definition	The number of rides available on a ride instrument. The rides may be specified for specific transit service (mode, route, line), day type, service type, rider classification, etc.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 56
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RideValue
Value Domain	
Data Type	UBYTE
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RideValueAdd_qty
Descriptive Name Context	ITS
Definition	The number of one way trips on a PT vehicle added to a fare instrument during a transaction. The ride value is based on the definition of the ride instrument (i.e., FC-RideInstrumentID).
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 57
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RideValueAdd
Value Domain	
Data Type	UBYTE
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RideValueDeduct_qty
Descriptive Name Context	ITS
Definition	The number of one way trips on a PT vehicle deducted from a fare instrument during a transaction. The ride value is based on the definition of the ride instrument (i.e., FC-RideInstrumentID).
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 58
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RideValueDeduct
Value Domain	
Data Type	UBYTE
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_RideValueRemaining_qty
Descriptive Name Context	ITS
Definition	The number of one way trips on a PT vehicle remaining on a fare instrument after a transaction. The ride value is based on the definition of the ride instrument (i.e., FC-RideInstrumentID).
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 59
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-RideValueRemaining
Value Domain	
Data Type	USHORT
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_SubassemblyID_txt/UCS
Descriptive Name Context	ITS
Definition	A unique string assigned by the transit agency used to identify a subassembly or part of a component.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 60
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-SubassemblyID
Value Domain	UCS
Data Type	UTF8String
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	open size
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_SubassemblyType_cd
Descriptive Name Context	ITS
Definition	Devices contained in larger systems in fare collection or vending machines.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 61
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-SubassemblyType
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	1 - recycled coin hopper 2 - recycled bill hopper 3 - change storage unit 4 - coin/bill counter 5 - coin hopper 6 - bill hopper 7 - coin/bill hopper 8 - coin mechanism 9 - bill acceptor 10 - ticket supply 11 - 149 reserved 150 - 245 local use 246 - 255 error codes
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_SubassemblyTypeDescription_txt /UCS
Descriptive Name Context	ITS
Definition	The description of a subassembly, particularly if FC-SubassemblyType is referenced by a local use code (156, 255).
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 62
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-SubassemblyTypeDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_TimePeriodIndex_nbr
Descriptive Name Context	ITS
Definition	A unique number that identifies a cell in a time period table. The index represents a time period over the course of a day type or specific calendar days.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 63
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-TimePeriodIndex
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_TimePeriodTableID_nbr
Descriptive Name Context	ITS
Definition	A unique number assigned by a public transportation agency to a table that defines time periods over the course of a day type or specific calendar days.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 64
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-TimePeriodTableID
Value Domain	
Data Type	IDENS
Representation Class Term	number
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_TransactionDescription_txt /UCS
Descriptive Name Context	ITS
Definition	A description of a fare transaction.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 65
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-TransactionDescription
Value Domain	UCS
Data Type	FOOTNOTE
Representation Class Term	text
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_TransactionResult_cd
Descriptive Name Context	ITS
Definition	Series of outcomes related to processing fare instruments.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 66
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-TransactionResult
Value Domain	
Data Type	INTEGER
Representation Class Term	code
Valid Value Range	
Valid Values List	0 -- comment 1 -- successful transaction 2-9 -- reserved 10 -- read error 11-19 reserved 20 -- write error 21-29 reserved 30 -- verify error 31-39 reserved 40 -- validation status error 41-49 reserved 50 status error 51-59 reserved 60 other 61-255 reserved
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	255
Internal Layout Min Size	0

Descriptive Name	FC_ValueAdd_amt /ISO 4217
Descriptive Name Context	ITS
Definition	Monetary amount added to the fare media during a transaction. The monetary authority and currency is based on the FC-MonetaryInstrumentID. The default value is in U.S. dollars ($mmm.cc)
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 67
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ValueAdd
Value Domain	ISO 4217
Data Type	USHORT
Representation Class Term	amount
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ValueCount_qty
Descriptive Name Context	ITS
Definition	The number of transactions counted by a device.
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 68
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ValueCount
Value Domain	
Data Type	USHORT
Representation Class Term	quantity
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ValueDeduct_amt /ISO 4217
Descriptive Name Context	ITS
Definition	The monetary amount deducted from the fare media during a transaction. The monetary value is based on the FC-MonetaryInstrumentID. The default authority and currency is in US dollars ($mmm.cc).
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 69
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ValueDeduct
Value Domain	ISO 4217
Data Type	USHORT
Representation Class Term	amount
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Descriptive Name	FC_ValueRemaining_amt/ISO 4217
Descriptive Name Context	ITS
Definition	The monetary value stored on electronic media (e.g., smart card, magnetic storage card) following a transaction. The monetary authority and currency is based on the FC-MonetaryInstrumentID. The default value is in U.S. dollars ($mmm.cc).
Formula	
Source	
Class Name	FC
Class Scheme Name	TCIP Classification Scheme
Class Scheme Version	ST-ITS-TCIP-FRAME V 1.2
Keyword	
Related data concept	
Relationship type	
Remarks	
External Name	fcdd 70
External Name Usage	TCIP Tree Identifier
ASN1 Name	FC-ValueRemaining
Value Domain	ISO 4217
Data Type	USHORT
Representation Class Term	amount
Valid Value Range	
Valid Values List	
Valid Value Rule	
Internal Representation Layout	
Internal Layout Max Size	
Internal Layout Min Size	

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**BadCardList
Message Description	A list of sequences of fare media of which the validity has been canceled temporarily or permanently due to loss of the instrument, technical malfunction, no credit on account, offenses committed by customer or other reason.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	1
Keywords	
Time Stamp	
Message Body	FcBadCardList ::= SEQUENCE OF FcFareMediaPair
Object Identifier	fc 2

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**ComponentErrorCounter
Message Description	The number of specific type of errors that occur on a given subassembly.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	4
Keywords	
Time Stamp	

Message Body	FcComponentErrorCounter ::= SEQUENCE{
	id FC-ComponentErrorTypeID,
	value-count FC-ValueCount,
	start-datetime CPT-DateTime,
	end-datetime CPT-DateTime
	}

Object Identifier	fc 3

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**ComponentErrorDefinition
Message Description	The definition of a type of error that may occur on a given type of a component or subassembly.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	6
Keywords	
Time Stamp	

Message Body	FcComponentErrorDefinition ::= SEQUENCE {
	id FC-ComponentErrorTypeID,
	type FC-ComponentErrorType,
	description FC-ComponentErrorDescription OPTIONAL,
	subassembly-type FC-SubassemblyType,
	serial-number CPT-SerialNumber,
	component-id FC-ComponentID OPTIONAL
	}

Object Identifier	fc 4

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**ComponentEventInstance
Message Description	A message that describes an event that occurs in a fare collection component or subassembly.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	10
Keywords	
Time Stamp	

Message Body	FcComponentEventInstance ::= SEQUENCE {
	id FC-ComponentEventID,
	type FC-ComponentEventType,
	status-begin CPT-DateTime, -- date/time event occurred
	status-end CPT-DateTime OPTIONAL, -- date/time event concluded
	list-of-status-types SEQUENCE OF FC-ComponentStatusType,
	severity-level CPT-SeverityLevel,
	component-id FC-ComponentID,
	subassembly-id FC-SubassemblyID OPTIONAL,
	serial-number CPT-SerialNumber OPTIONAL, -- refers to component
	footnote CPT-Footnote OPTIONAL
	}

Object Identifier	fc 5

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**ComponentEventStatusReport
Message Description	An update of a previous message that described a component event (**Fc**ComponentEventInstance).
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	4
Keywords	
Time Stamp	

Message Body	FcComponentEventStatusReport ::= SEQUENCE {
	id FC-ComponentEventID,
	list-of-status-types SEQUENCE OF FC-ComponentStatusType,
	datetime CPT-DateTime, -- date/time update occurred
	footnote CPT-Footnote OPTIONAL
	}

Object Identifier	fc 6

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**CountTypeDefinition
Message Description	The definition of a component or subassembly that counts the number of transactions. Note: A user, operator or vendor shall define the term 'transaction' as part of the **Fc**CountTypeDescription data element.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	6
Keywords	
Time Stamp	

Message Body	FcCountTypeDefinition ::= SEQUENCE {
	id FC-CountTypeID,
	subassembly-type FC-SubassemblyType,
	component-id FC-ComponentID,
	description FC-CountTypeDescription,
	serial-number CPT-SerialNumber,
	upper-serial-number CPT-UpperSerialNumber OPTIONAL
	}

Object Identifier	fc 7

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareCharacterCost
Message Description	The fare (monetary or ride value, or algorithm for calculating value) required for specific public transportation services provided to various rider types and customers using various types of fare instruments during different time periods of day or date.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	9
Keywords	
Time Stamp	
Message Body	FcFareCharacterCost ::= SEQUENCE { index FC-FareCharacterCostIndex, rider-classification FC-RiderClassification, service-type SCH-ServiceType OPTIONAL, time-period-index FC-TimePeriodIndex OPTIONAL, fare-type-index CHOICE { fare-zone-index FC-FareZoneIndex, fare-distance-index FC-FareDistanceIndex } OPTIONAL list-of-fare-instrument-ids SEQUENCE OF FC-FareInstrumentID, monetary-value FC-FareCost OPTIONAL, ride-value FC-RideValue OPTIONAL, algorithm OCTET STRING OPTIONAL -- (executable or algorithm for cal } (WITH COMPONENTS{..., monetary-value PRESENT}| WITH COMPONENTS{..., ride-value PRESENT} | WITH COMPONENTS{..., algorithm PRESENT})
Object Identifier	fc 8

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareDistanceTable
Message Description	A table that defines the distance between stop point pairs. The distance may be based on the fare distance type (e.g., line of sight, linear network)
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	4
Keywords	
Time Stamp	

Message Body	FcFareDistanceTable ::= SEQUENCE {
	id FC-FareDistanceTableID,
	type FC-FareDistanceType,
	activation-datetime CPT-DateTime,
	list-of-fare-cell-indices SEQUENCE OF FC-FareDistanceIndex
	}

Object Identifier	fc 10

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareDistanceTableEntry
Message Description	An entry into a distance-based boarding-alighting matrix. The boarding and alighting points are defined by existing, operational stop points. Direction is implied by boarding and alighting points.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	3
Keywords	
Time Stamp	

Message Body	FcFareDistanceTableEntry ::= SEQUENCE {
	index FC-FareDistanceIndex,
	boarding-stop-point-id CPT-StopPointID,
	alighting-stop-point-id CPT-StopPointID
	}

Object Identifier	fc 9

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareExceptionCell
Message Description	A record that contains an exception to a fare table. This exception is based on a trip from one point to another, and is part of **Fc**FareExceptionTable.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	11
Keywords	
Time Stamp	
Message Body	FcFareExceptionCell ::= SEQUENCE { index FC-FareExceptionCellIndex, boarding-stop-point-id CPT-StopPointID, alighting-stop-point-id CPT-StopPointID OPTIONAL, footnote FC-Footnote, service-type SCH-ServiceType OPTIONAL, mode CPT-Mode OPTIONAL, list-of-time-period-indices SEQUENCE OF FC-TimePeriodIndex OPTIONAL, monetary-instrument-id FC-MonetaryInstrumentTypeID OPTIONAL, ride-instrument-id FC-RideInstrumentID OPTIONAL, pass-instrument-id FC-PassInstrumentID OPTIONAL, fare-media-other-id FC-FareMediaOtherID OPTIONAL, money-deduct FC-ValueDeduct OPTIONAL, ride-deduct FC-RideValueDeduct OPTIONAL } (WITH COMPONENTS{..., monetary-instrument-id, money-deduct PRESENT}| WITH COMPONENTS{..., ride-instrument-id, money-deduct PRESENT} | WITH COMPONENTS{..., pass-instrument-id, money-deduct PRESENT} | WITH COMPONENTS{..., fare-media-other-id, money-deduct PRESENT}| WITH COMPONENTS{..., monetary-instrument-id, ride-deduct PRESENT}| WITH COMPONENTS{..., ride-instrument-id, ride-deduct PRESENT} | WITH COMPONENTS{..., pass-instrument-id, ride-deduct PRESENT} | WITH COMPONENTS{..., fare-media-other-id, ride-deduct PRESENT})
Object Identifier	fc 11

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareExceptionTable
Message Description	A table which lists all the exceptions to a given fare structure.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	7
Keywords	
Time Stamp	

Message Body	FcFareExceptionTable ::= SEQUENCE {
	id FC-FareExceptionTableID,
	activation-date CPT-ActivationDate,
	deactivation-date CPT-DeactivationDate OPTIONAL,
	table-id FC-FareTableID OPTIONAL,
	-- index identifying exception to a fare table
	time-period-table-id FC-TimePeriodTableID OPTIONAL,
	agency-id CPT-AgencyID OPTIONAL, -- that accepts exception
	list-of-fare-cell-indices SEQUENCE OF FC-FareExceptionCellIndex
	}

Object Identifier	fc 12

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareInstrument
Message Description	The definition of a valid fare instrument that can be used by a specified public transportation service. A fare instrument may be defined as multiple value instruments, e.g., ten cents with a senior pass.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	11
Keywords	
Time Stamp	
Message Body	FcFareInstrument ::= SEQUENCE { id FC-FareInstrumentID, agency-id CPT-AgencyID, monetary-instrument-type-id FC-MonetaryInstrumentTypeID OPTIONAL, ride-instrument-id FC-RideInstrumentID OPTIONAL, pass-instrument-id FC-PassInstrumentID OPTIONAL, fare-media-other-id FC-FareMediaOtherID OPTIONAL, riders-on-fi-max FC-RidersOnFIMax OPTIONAL, activation-datetime CPT-DateTime OPTIONAL, expiration-datetime FC-ExpirationDateTime OPTIONAL, list-of-fi-standards SEQUENCE OF FC-FIStandard OPTIONAL, instrument-physical-dimensions FOOTNOTE OPTIONAL } (WITH COMPONENTS {..., monetary-instrument-type-id PRESENT} | WITH COMPONENTS {..., ride-instrument-id PRESENT} | WITH COMPONENTS {..., pass-instrument-id PRESENT} | WITH COMPONENTS {..., fare-media-other-id PRESENT})
Object Identifier	fc 13

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareMediaID
Message Description	A unique string assigned to each fare instrument issued by a financial authority (e.g., transit agency) which is recognized as payment for transit services.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	2
Keywords	
Time Stamp	

Message Body	FcFareMediaID ::= SEQUENCE {
	text FC-FareMediaID-txt OPTIONAL,
	number FC-FareMediaID-nbr
	}

Object Identifier	fc 14

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareMediaOtherDefinition
Message Description	A fare instrument which does not fall into monetary, ride or pass categories. (This may include an employee or retired identification card.)
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	3
Keywords	
Time Stamp	

Message Body	FcFareMediaOtherDefinition ::= SEQUENCE {
	id FC-FareMediaOtherID,
	description FC-FareMediaOtherDescription,
	agency-id CPT-AgencyID OPTIONAL
	}

Object Identifier	fc 15

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareMediaPair
Message Description	The start and end of a sequence of fare media.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	2
Keywords	
Time Stamp	

Message Body	FcFareMediaPair ::= SEQUENCE {
	first-number FcFareMediaID,
	last-number FcFareMediaID OPTIONAL
	}

Object Identifier	fc 16

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareTable
Message Description	A list of the fares for services provided by public transportation agencies.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	9
Keywords	
Time Stamp	

Message Body	FcFareTable ::= SEQUENCE {
	id FC-FareTableID,
	time-period-table-id FC-TimePeriodTableID,
	table-type-id CHOICE { zone-table-id FC-FareZoneTableID,
	distance-table-id FC-FareDistanceTableID } OPTIONAL,
	mode CPT-Mode OPTIONAL,
	agency-id CPT-AgencyID OPTIONAL,
	activation-datetime CPT-DateTime OPTIONAL,
	deactivation-datetime CPT-DateTime OPTIONAL,
	list-of-fare-character-cost SEQUENCE OF FcFareCharacterCost,
	input-parameters OCTET STRING OPTIONAL
	-- these are the base values of the table when an algorithm is specified in the
	-- FcFareCharacterCost record
	}

Object Identifier	fc 17

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareTransaction
Message Description	The monetary values placed on fare media by the fare transaction unit. FC-ValueRemaining contains the value of the fare media, FC-ValueAdd contains the value added to the fare media and FC-ValueDeduct contains the amount deducted from the fare media. The currency is based on the monetary instrument authority.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	6
Keywords	
Time Stamp	

Message Body	FcFareTransaction ::= SEQUENCE {
	fare-media-id FcFareMediaID,
	add FC-ValueAdd,
	deduct FC-ValueDeduct,
	remaining FC-ValueRemaining,
	result FC-TransactionResult OPTIONAL,
	description FC-TransactionDescription OPTIONAL
	}

Object Identifier	fc 18

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareZoneTable
Message Description	A table that pairs valid boarding and alighting zones.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	5
Keywords	
Time Stamp	

Message Body	FcFareZoneTable ::= SEQUENCE {
	id FC-FareZoneTableID,
	list-of-cell-indices SEQUENCE OF FC-FareZoneIndex,
	activation-datetime CPT-DateTime OPTIONAL,
	deactivation-datetime CPT-DateTime OPTIONAL,
	agency-id CPT-AgencyID OPTIONAL
	}

Object Identifier	fc 19

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FareZoneTableEntry
Message Description	An entry into a zone-based boarding-alighting matrix. Direction is implied by boarding and alighting pairs.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	3
Keywords	
Time Stamp	

Message Body	FcFareZoneTableEntry ::= SEQUENCE {
	index FC-FareZoneIndex,
	boarding-zone-id CPT-FareZoneID,
	alighting-zone-id CPT-FareZoneID
	}

Object Identifier	fc 20

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FinancialTransaction
Message Description	A report on a financial transaction related to selling or processing fare instruments.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	7
Keywords	
Time Stamp	
Message Body	FcFinancialTransaction ::= SEQUENCE { id FC-FinancialTransactionID, type FC-FinancialTransactionType, agency-id CPT-AgencyID, --agency processing/recording financial transactio previous-use-parameters FcUseParameters, --associated with transaction rider-classification FC-RiderClassification OPTIONAL, fare-media-id FcFareMediaID OPTIONAL, list-of-fare-instrument-ids SEQUENCE OF FC-FareInstrumentID OPTIONAL, list-of-fare-transactions SEQUENCE OF FcFareTransaction OPTIONAL, list-of-ride-transactions SEQUENCE OF FcRideTransaction OPTIONAL } (WITH COMPONENTS {..., list-of-fare-transactions PRESENT} | WITH COMPONENTS {..., list-of-ride-transactions PRESENT})
Object Identifier	fc 21

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**FMStoredData
Message Description	Data stored on electronic fare media (FM). These data elements describe the use (e.g., owner, routes, service) classes and value of the media. This includes parameters that support transfers for zone, distance and time based fares.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	17
Keywords	
Time Stamp	
Message Body	FcFMStoredData ::= SEQUENCE { encryption-code SEQUENCE OF FC-AgencyReserveCode OPTIONAL, fare-media-id FcFareMediaID, account-id FC-AccountID OPTIONAL, start-datetime CPT-DateTime, sale-datetime CPT-DateTime, agency-seller-id CPT-AgencyID, expiration-datetime FC-ExpirationDateTime, fare-instrument-id FC-FareInstrumentID, rider-classification FC-RiderClassification, list-of-use-parameters SEQUENCE OF FcUseParameters OPTIONAL, sales-employee-id CPT-EmployeeID OPTIONAL, -- person who sold the fare medi pos-id FC-ComponentID OPTIONAL, --refers to POS stop-point-at-pos CPT-StopPointID OPTIONAL, -- refers to POS station money-remaining FC-MonetaryValueRemaining OPTIONAL, rides-remaining FC-RideValueRemaining OPTIONAL, boarding-points-accepted SEQUENCE OF CPT-StopPointID OPTIONAL, fare-zones-accepted SEQUENCE OF CPT-FareZoneID OPTIONAL } (WITH COMPONENTS {..., money-remaining PRESENT} | WITH COMPONENTS {..., rides-remaining PRESENT})
Object Identifier	fc 22

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**InitialPOSParameters
Message Description	The initial point of sale parameters needed for fare media transactions.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	11
Keywords	
Time Stamp	
Message Body	FcInitialPOSParameters ::= SEQUENCE { stop-point-id CPT-StopPointID, agency-selling-FM CPT-AgencyID, fare-media-id FcFareMediaID, financial-transaction-id FC-FinancialTransactionID, sale-datetime CPT-DateTime, -- date/time of sale employee-id CPT-EmployeeID OPTIONAL, vending-id FC-ComponentID OPTIONAL, fare-instrument-id FC-FareInstrumentID OPTIONAL, money-remaining FC-MonetaryValueRemaining OPTIONAL, rides-remaining FC-RideValueRemaining OPTIONAL, pass-value FC-PassValue OPTIONAL } (WITH COMPONENTS {..., employee-id, fare-instrument-id PRESENT}| WITH COMPONENTS {..., employee-id, money-remaining PRESENT} | WITH COMPONENTS {..., employee-id, rides-remaining PRESENT} | WITH COMPONENTS {..., vending-id, fare-instrument-id PRESENT}| WITH COMPONENTS {..., vending-id, money-remaining PRESENT} | WITH COMPONENTS {..., vending-id, rides-remaining PRESENT})
Object Identifier	fc 23

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**MonetaryInstrumentDefinition
Message Description	The definition of a type of instrument that possesses a monetary value including cash (bills and coins), tokens, tickets, passes, etc.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	5
Keywords	
Time Stamp	

Message Body	FcMonetaryInstrumentDefinition ::= SEQUENCE {
	id FC-MonetaryInstrumentTypeID,
	type FC-MonetaryInstrumentType,
	description FC-MonetaryInstrumentDescription,
	authority FC-MonetaryInstrumentAuthority,
	value FC-MonetaryInstrumentValue
	}

Object Identifier	fc 24

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**PassInstrumentDefinition
Message Description	A fare instrument which contains unlimited number of rides over a period of time, e.g., monthly, weekly and daily passes.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	9
Keywords	
Time Stamp	

Message Body	FcPassInstrumentDefinition ::= SEQUENCE {
	id FC-PassInstrumentID,
	type FC-PassInstrumentType,
	description FC-PassInstrumentDescription OPTIONAL,
	agency-id CPT-AgencyID OPTIONAL, -- issuer of pass instrument
	value FC-PassValue,
	expiration-datetime FC-ExpirationDateTime OPTIONAL,
	list-of-modes-accepted SEQUENCE OF CPT-Mode OPTIONAL,
	list-of-routes-accepted SEQUENCE OF SCH-RouteID OPTIONAL,
	list-of-lines-accepted SEQUENCE OF SCH-BlockName OPTIONAL
	}

Object Identifier	fc 25

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**RideInstrumentDefinition
Message Description	The definition of a fare instrument that possesses a ride value for a trip on a public transportation vehicle serving a transit agency or a region fare structure.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	8
Keywords	
Time Stamp	

Message Body	FcRideInstrumentDefinition ::= SEQUENCE{
	id FC-RideInstrumentID,
	type FC-RideInstrumentType,
	description FC-RideInstrumentDescription,
	value FC-RideValue,
	agency-id CPT-AgencyID,
	list-of-modes-accepted SEQUENCE OF CPT-Mode OPTIONAL,
	list-of-routes-accepted SEQUENCE OF SCH-RouteName OPTIONAL,
	list-of-lines-accepted SEQUENCE OF SCH-BlockName OPTIONAL
	}

Object Identifier	fc 26

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**RideTransaction
Message Description	The ride units placed on the fare media by the fare transaction unit. **Fc**RideRemaining contains the value of the fare media, FC-RideValueAdd contains the value added to the fare media and FC-RideValueDeduct contains the amount deducted from the fare media.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	6
Keywords	
Time Stamp	

Message Body	FcRideTransaction ::= SEQUENCE {
	fare-media-id FcFareMediaID,
	add FC-RideValueAdd,
	deduct FC-RideValueDeduct,
	remaining FC-RideValueRemaining,
	result FC-TransactionResult OPTIONAL,
	description FC-TransactionDescription OPTIONAL
	}

Object Identifier	fc 27

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**TimePeriodEntry
Message Description	The beginning and ending of a period of time in a transit service day type (e.g., day of the week) or calendar date. This entry is used to complete a **Fc**TimePeriodTable.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	4
Keywords	
Time Stamp	

Message Body	FcTimePeriodEntry ::= SEQUENCE {
	index FC-TimePeriodIndex,
	begin-time TIME,
	end-time TIME,
	day CHOICE { calendar-date CPT-CalendarDate,
	day-type SCH-DayType }
	}

Object Identifier	fc 28

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**TimePeriodTable
Message Description	A table that segments a day, day type, week or year into separate time periods.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	5
Keywords	
Time Stamp	

Message Body	FcTimePeriodTable::= SEQUENCE {
	id FC-TimePeriodTableID,
	list-of-time-period-indices SEQUENCE OF FC-TimePeriodIndex,
	agency-id CPT-AgencyID OPTIONAL,
	activation-date CPT-ActivationDate OPTIONAL,
	deaactivation-date CPT-DeactivationDate OPTIONAL
	}

Object Identifier	fc 29

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**UseParameters
Message Description	Information collected on each use of a fare media.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	18
Keywords	
Time Stamp	
Message Body	FcUseParameters ::= SEQUENCE { financial-transaction-id FC-FinancialTransactionID, agency-id CPT-AgencyID, -- agency providing service boarding-point-id CPT-StopPointIDLong OPTIONAL, boarding-zone-id CPT-FareZoneID OPTIONAL, boarding-datetime CPT-DateTime, value-add FC-ValueAdd OPTIONAL, value-deduct FC-ValueDeduct OPTIONAL, ride-value-add FC-RideValueAdd OPTIONAL, ride-value-deduct FC-RideValueDeduct OPTIONAL, route-id SCH-RouteID OPTIONAL, route-direction-name SCH-RouteDirectionName OPTIONAL, riders FC-NumberOfRiders OPTIONAL, position FC-PrinterPosition OPTIONAL, mode CPT-Mode OPTIONAL, service-type SCH-ServiceType OPTIONAL, trip-type SCH-TripType OPTIONAL, alighting-datetime CPT-DateTime OPTIONAL, alighting-point-id CPT-StopPointIDLong OPTIONAL, alighting-zone-id CPT-FareZoneID OPTIONAL } (WITH COMPONENTS {..., boarding-point-id, value-add PRESENT} | WITH COMPONENTS {..., boarding-point-id, value-deduct PRESENT} | WITH COMPONENTS {..., boarding-point-id, ride-value-add PRESENT} | WITH COMPONENTS {..., boarding-point-id, ride-value-deduct PRESENT} | WITH COMPONENTS {..., boarding-zone-id, value-add PRESENT} | WITH COMPONENTS {..., boarding-zone-id, value-deduct PRESENT} | WITH COMPONENTS {..., boarding-zone-id, ride-value-add PRESENT} | WITH COMPONENTS {..., boarding-zone-id, ride-value-deduct PRESENT})
Object Identifier	fc 30

Message Identifier	TCIP
Message Set Identifier	ST-TCIP-TCIP-FC
Message Set Version	**V 1.0**
Message Group	FC
Message Name	**Fc**ValueCounter
Message Description	The number of complete transactions on a specified subassembly of a component or device.
Meta Data Source	Direct
Priority	no priority
Frequency	
Message Length	4
Keywords	
Time Stamp	

Message Body	FcValueCounter ::= SEQUENCE {
	id FC-CountTypeID,
	count FC-ValueCount,
	start-datetime CPT-DateTime OPTIONAL,
	end-datetime CPT-DateTime OPTIONAL
	}

Object Identifier	fc 31

Section 5
CONFORMANCE

The Fare Collection business area supports the first three levels of conformance: Conformance Levels 1 to 3 as defined in NTCIP 1400, formerly referenced as ST-ITS-TCIP-FRAME, Version 1.1.

Conformance Levels are defined as a collection of FC-related objects that are required to support a function of a component in the Spatial Representation area. **LEVEL ONE** conformance only includes data elements contained within this document and other documents that support this business area. **LEVEL TWO** conformance includes all the requirements contained in Section 4.2. **LEVEL THREE** conformance includes all the requirements contained in Section 4.3.

5.1 LEVEL ONE CONFORMANCE

Data Element Name	Reference*
FC Data Elements	NTCIP 1408, Section 4.1
CPT Data Elements	NTCIP 1401, Section 4.1
SCH Data Elements	NTCIP 1404, Section 4.1

* NTCIP 1408 refers to this document. See Section 4.1 for complete listing.

* NTCIP 1401 Section 4.1 refers to the Common Public Transit Data Elements (Version 1.1).

* NTCIP 1404 Section 4.1 refers to the Standard on Scheduling/Runcutting Objects (Version 1.1).

The FC conformance group consists of the global set of data elements related to Fare Collection as outlined in the FC message set.

5.2 LEVEL TWO CONFORMANCE

Message Name	Reference
FC Messages	NTCIP 1408, Section 4.2
CPT-ActivationDate, CPT-AgencyID, CPT-CalendarDate, CPT-DateTime, CPT-DeactivationDate, CPT-EmployeeID, CPT-FareZoneID, CPT-Footnote, CPT-Mode, CPT-SerialNumber, CPT-SeverityLevel, CPT-StopPointID, CPT-StopPointIDLong, CPT-UpperSerialNumber	NTCIP 1401, Section 4.1
SCH-BlockName, SCH-DayType, SCH-RouteDirectionName, SCH-	ST-ITS-TCIP-SCH Section 4.1

Message Name	Reference
RouteName, SCH-ServiceType, SCH-TripType	

.

ANNEX A
Data Element/Message Use Cross Reference Table

DE/Msg Name	Message Name	Data element syntax	Comment
CPT-ActivationDate	FcFareExceptionTable		
CPT-ActivationDate	TimePeriodTable		
CPT-AgencyID	FcFareExceptionTable		The agency that accepts this fare exception table.
CPT-AgencyID	FcFareInstrument		The agency that owns the fare instrument. If this is the definition of currency, then the agency that accepts the instrument is used.
CPT-AgencyID	FcFareMediaOtherDefinition		
CPT-AgencyID	FcFareTable		
CPT-AgencyID	FcFareZoneTable		
CPT-AgencyID	FcFinancialTransaction		Agency processing and recording the financial transaction.
CPT-AgencyID	FcFMStoredData		agency-seller-id: agency that sold the fare media (may not be owner of the fare media).
CPT-AgencyID	FcInitialPOSParameters		agency-selling-fm
CPT-AgencyID	FcPassInstrumentDefinition		Issuer of pass instrument.
CPT-AgencyID	FcRideInstrumentDefinition		
CPT-AgencyID	FcTimePeriodTable		
CPT-AgencyID	FcUseParameters		Agency providing service

CPT-CalendarDate	FcTimePeriodEntry	CHOICE	CHOICE {
			calendar-date CPT-CalendarDate,
			day-type SCH-DayType
			}

CPT-DateTime	FcComponentErrorCounter		start-datetime
CPT-DateTime	FcComponentErrorCounter		end-datetime

DE/Msg Name	Message Name	Data element syntax	Comment
CPT-DateTime	FcComponentEventInstance		status-begin. The date and time at which the event occurred.
CPT-DateTime	FcComponentEventInstance		status-end; date/time event completed.
CPT-DateTime	FcComponentEventStatusReport		Time and date at which update occurred.
CPT-DateTime	FcFareDistanceTable		activation-datetime: activation of the fare distance table.
CPT-DateTime	FcFareInstrument		activation-datetime: The date at which the instrument is valid. For example, a monthly fare will be valid on the first day of a particular month, or on the first day it is used. 0000:00:00 indicates that the fare is valid upon first use.
CPT-DateTime	FcFareTable		activation-datetime
CPT-DateTime	FcFareTable		deactivation-datetime
CPT-DateTime	FcFareZoneTable		activation-datetime
CPT-DateTime	FcFareZoneTable		deactivation-datetime
CPT-DateTime	FcFMStoredData		start-datetime
CPT-DateTime	FcFMStoredData		sale-datetime: date and time of sale of fare media
CPT-DateTime	FcInitialPOSParameters		Date and time of sale.
CPT-DateTime	FcUseParameters		boarding-datetime
CPT-DateTime	FcUseParameters		alighting-datetime
CPT-DateTime	FcValueCounter		start-datetime
CPT-DateTime	FcValueCounter		end-datetime
CPT-DeactivationDate	FcFareExceptionTable		
CPT-DeactivationDate	FcTimePeriodTable		
CPT-EmployeeID	FcFMStoredData		sales-employee-id: Transit staff person who sold the fare media. The ID is correlated to agency-seller-id.

DE/Msg Name	Message Name	Data element syntax	Comment
CPT-EmployeeID	FcInitialPOSParameters		Either CPT-EmployeeID or vending-id (FC-ComponentID) (place of purchase of or person who sold fare media).
CPT-FareZoneID	FcFareZoneTableEntry		boarding-zone-id: zone in which passenger boards a transit vehicle in revenue service for the purposes of calculating a fare.
CPT-FareZoneID	FcFareZoneTableEntry		alighting-zone-id: zone in which passenger boards a transit vehicle in revenue service for the purposes of calculating a fare.
CPT-FareZoneID	FcFMStoredData	SEQUENCE OF	list-of-fare-zones-accepted: fare zones at which transit patrons may use fare media as payment to board a transit vehicle in revenue service.
CPT-FareZoneID	FcUseParameters		boarding-zone-id: Use at least one of the following: boarding-point-id, boarding-zone-id
CPT-FareZoneID	FcUseParameters		alighting-zone-id
CPT-Footnote	FcComponentEventInstance		
CPT-Footnote	FcComponentEventStatusReport		
CPT-Footnote	FcFareExceptionCell		Describes the criteria for why this is an exception and any notes related to this exception.
CPT-Footnote	FcFareInstrument		physical-dimensions
CPT-Mode	FcFareExceptionCell		The mode for which this exception is valid.
CPT-Mode	FcFareTable		
CPT-Mode	FcPassInstrumentDefinition	SEQUENCE OF	list-of-modes-accepted: the modes on which the pass may be used.

DE/Msg Name	Message Name	Data element syntax	Comment
CPT-Mode	FcRideInstrumentDefinition	SEQUENCE OF	list-of-modes-accepted: Modes on which ride instrument may be used.
CPT-Mode	FcUseParameters		
CPT-SerialNumber	FcComponentErrorDefinition		
CPT-SerialNumber	FcComponentEventInstance		This data element refers to the component identification (not the the subassembly).
CPT-SerialNumber	FcCountTypeDefinition		
CPT-SeverityLevel	FcComponentEventInstance		
CPT-StopPointID	FcFareDistanceTableEntry		boarding-stop-point-id: stop point where patron boards the transit vehicle or station.
CPT-StopPointID	FcFareDistanceTableEntry		alighting-stop-point-id: stop point where patron exits transit vehicle or station.
CPT-StopPointID	FcFareExceptionCell		boarding-point-id: stop point where patron boards a transit vehicle in revenue service.
CPT-StopPointID	FcFareExceptionCell		alighting-point-id: stop point where a patron exists a transit vehicle or station.
CPT-StopPointID	FcFMStoredData		Refers to a POS at a station. Not included if POS is not at a stop point.
CPT-StopPointID	FcFMStoredData	SEQUENCE OF	list-of-boarding-points-accepted: stop points at which transit patrons can use fare media to board the transit vehicle.
CPT-StopPointID	FcInitialPOSParameters		
CPT-StopPointIDLong	FcUseParameters		boarding-point-id: Use at least one of the following: boarding-point-id, boarding-zone-id

DE/Msg Name	Message Name	Data element syntax	Comment
CPT-StopPointIDLong	FcUseParameters		alighting-point-id
CPT-UpperSerialNumber	FcCountTypeDefinition		
FC-AccountID	FcFMStoredData		
FC-AgencyReserveCode	FcFMStoredData	SEQUENCE OF	
FC-ComponentErrorDescription	FcComponentErrorDefinition		
FC-ComponentErrorType	FcComponentErrorDefinition		
FC-ComponentErrorTypeID	FcComponentErrorCounter		
FC-ComponentErrorTypeID	FcComponentErrorDefinition		
FC-ComponentEventID	FcComponentEventInstance		
FC-ComponentEventID	FcComponentEventStatusReport		
FC-ComponentEventType	FcComponentEventInstance		
FC-ComponentID	FcComponentErrorDefinition		
FC-ComponentID	FcComponentEventInstance		
FC-ComponentID	FcCountTypeDefinition		
FC-ComponentID	FcFMStoredData		Refers to POS component or equipment identifier.
FC-ComponentID	FcInitialPOSParameters		vending-id: Either CPT-EmployeeID or vending-id (FC-ComponentID) (place of purchase of or person who sold fare media).
FC-ComponentStatusType	FcComponentEventInstance	SEQUENCE OF	
FC-ComponentStatusType	FcComponentEventStatusReport	SEQUENCE OF	
FC-CountTypeDescription	FcCountTypeDefinition		
FC-CountTypeID	FcCountTypeDefinition		
FC-CountTypeID	FcValueCounter		

DE/Msg Name	Message Name	Data element syntax	Comment
FC-ExpirationDateTime	FcFareInstrument		The date and time for which the fare instrument is no longer valid (whether or not the instrument has been activated). For example, a fare instrument which is activated when first used may expire after a year. So if the activation date crosses the expiration date, whether or not the activation period is complete, the instrument is no longer valid.
FC-ExpirationDateTime	FcFMStoredData		
FC-ExpirationDateTime	FcPassInstrumentDefinition		The date/time on which the pass expires.
FcFareCharacterCost	FcFareTable	SEQUENCE OF	
FC-FareCharacterCostIndex	FcFareCharacterCost		
FC-FareCost	FcFareCharacterCost		Cost in currency of the fare.

FC-FareDistanceIndex	FcFareCharacterCost	CHOICE	CHOICE {
			zone-index FC-FareZoneIndex,
			distance-index FC-FareDistanceIndex
			}

FC-FareDistanceIndex	FcFareDistanceTable	SEQUENCE OF	
FC-FareDistanceIndex	FcFareDistanceTableEntry		
FC-FareDistanceTableID	FcFareDistanceTable		

FC-FareDistanceTableID	FcFareTable	CHOICE`	CHOICE {
			zone-id FC-FareZoneTableID,
			distance-id FC-FareDistanceTableID
			}

FC-FareDistanceType	FcFareDistanceTable		
FC-FareExceptionCellIndex	FcFareExceptionCell		

DE/Msg Name	Message Name	Data element syntax	Comment
FC-FareExceptionCellIndex	FcFareExceptionTable	SEQUENCE OF	
FC-FareExceptionTableID	FcFareExceptionTable		
FC-FareInstrumentID	FcFareCharacterCost	SEQUENCE OF	
FC-FareInstrumentID	FcFareInstrument		
FC-FareInstrumentID	FcFinancialTransaction	SEQUENCE OF	This field is used when multiple fare instruments (or purses) are used (e.g., cash and stored value; transfer and pass) to pay for a fare.
FC-FareInstrumentID	FcFMStoredData		
FC-FareInstrumentID	FcInitialPOSParameters		Use at least one of the following: FC-MonetaryValueRemaining FC-RideValueRemaining FC-FareInstrumentID
FcFareMediaID	FcFareMediaPair		first-number: the first FareMediaID is a sequence of identifiers, or an individual identifier if last-number is not included.
FcFareMediaID	FcFareMediaPair		last-number: the end of a sequence of FareMediaIDs.
FcFareMediaID	FcFareTransaction		
FcFareMediaID	FcFinancialTransaction		Recorded if an electronic fare media was used.
FcFareMediaID	FcFMStoredData		
FcFareMediaID	FcInitialPOSParameters		
FcFareMediaID	FcRideTransaction		
FC-FareMediaID-nbr	FcFareMediaID		
FC-FareMediaID-txt	FcFareMediaID		
FC-FareMediaOtherDescription	FcFareMediaOtherDefinition		
FC-FareMediaOtherID	FcFareExceptionCell		Usually only one instrument is identified, although in some cases more than one instrument is used.

DE/Msg Name	Message Name	Data element syntax	Comment
FC-FareMediaOtherID	FcFareInstrument		Indicative with FC-MonetaryInstrumentTypeID, FC-RideInstrumentID, FC-PassInstrumentID, FC-FareMediaOtherID
FC-FareMediaOtherID	FcFareMediaOtherDefinition		
FcFareMediaPair	FcBadCardList	SEQUENCE OF	
FC-FareMonetaryValue	FcFareCharacterCost		
FC-FareRideValue	FcFareCharacterCost		This data element may be used with FC-FareMonetaryValue
FC-FareTableID	FcFareExceptionTable		An index associating this exception table with a fare table for which it overrides.
FC-FareTableID	FcFareTable		
FcFareTransaction	FcFinancialTransaction		Records the values stored on electronic fare media.

FC-FareZoneIndex	FcFareCharacterCost	CHOICE	CHOICE {
			FC-FareZoneIndex,
			FC-FareDistanceIndex
			}

FC-FareZoneIndex	FcFareZoneTableEntry		
FC-FareZoneIndex	FcFareZoneTableID	SEQUENCE OF	

FC-FareZoneTableID	FcFareTable	CHOICE	CHOICE {
			FC-FareZoneTableID,
			FC-FareDistanceTableID
			}

FC-FareZoneTableID	FcFareZoneTable		
FC-FinanacialTransactionID	FcInitialPOSParameters		
FC-FinancialTransactionID	FcFinancialTransaction		
FC-FinancialTransactionID	FcUseParameters		
FC-FinancialTransactionType	FcFinancialTransaction		
FC-FIStandard	FcFareInstrument	SEQUENCE OF	
FC-Footnote	FcFareExceptionCell		Also used in PiTripRequest.

DE/Msg Name	Message Name	Data element syntax	Comment
FC-MonetaryInstrumentAuthority	FcMonetaryInstrumentDefinition		
FC-MonetaryInstrumentDescription	FcMonetaryInstrumentDefinition		
FC-MonetaryInstrumentType	FcMonetaryInstrumentDefinition		
FC-MonetaryInstrumentTypeID	FcFareExceptionCell		Usually only one instrument is identified, although in some cases more than one instrument is used.
FC-MonetaryInstrumentTypeID	FcFareInstrument		Indicative with FC-MonetaryInstrumentTypeID, FC-RideInstrumentID, FC-PassInstrumentID, FC-FareMediaOtherID
FC-MonetaryInstrumentTypeID	FcMonetaryInstrumentDefinition		
FC-MonetaryInstrumentValue	FcMonetaryInstrumentDefinition		
FC-MonetaryValueRemaining	FcFMStoredData		
FC-MonetaryValueRemaining	FcInitialPOSParameters		Use at least one of the following: FC-MonetaryValueRemaining FC-RideValueRemaining FC-FareInstrumentID
FC-NumberOfRiders	FcUseParameters		
FC-PassInstrumentDescription	FcPassInstrumentDefinition		
FC-PassInstrumentID	FcFareExceptionCell		Usually only one instrument is identified, although in some cases more than one instrument is used.
FC-PassInstrumentID	FcFareInstrument		Indicative with FC-MonetaryInstrumentTypeID, FC-RideInstrumentID, FC-PassInstrumentID, FC-FareMediaOtherID
FC-PassInstrumentID	FcPassInstrumentDefinition		
FC-PassInstrumentType	FcPassInstrumentDefinition		
FC-PassValue	FcPassInstrumentDefinition		
FC-PrinterPosition	FcUseParameters		

DE/Msg Name	Message Name	Data element syntax	Comment
FC-RideInstrumentDescription	FcRideInstrumentDefinition		
FC-RideInstrumentID	FcFareExceptionCell		Usually only one instrument is identified, although in some cases more than one instrument is used.
FC-RideInstrumentID	FcFareInstrument		Indicative with FC-MonetaryInstrumentTypeID, FC-RideInstrumentID, FC-PassInstrumentID, FC-FareMediaOtherID
FC-RideInstrumentID	FcRideInstrumentDefinition		
FC-RideInstrumentType	FcRideInstrumentDefinition		
FC-RiderClassification	FcFareCharacterCost		
FC-RiderClassification	FcFinancialTransaction		
FC-RiderClassification	FcFMStoredData		
FC-RidersOnFIMax	FcFareInstrument		Maximum number of patrons who can use the same instrument to purchase fares.
FC-RideValue	FcRideInstrumentDefinition		
FC-RideValueAdd	FcRideTransaction		
FC-RideValueAdd	FcUseParameter		Include at least one of the following: FC-ValueAdd, FC-ValueDeduct, FC-RideValueAdd, FC-RideValueDeduct
FC-RideValueDeduct	FcFareExceptionCell		Either FC-FareMonetaryValue or FC-FareRideValue, or both shall be included.
FC-RideValueDeduct	FcRideTransaction		

DE/Msg Name	Message Name	Data element syntax	Comment
FC-RideValueDeduct	FcUseParameters		Include at least one of the following: FC-ValueAdd, FC-ValueDeduct, FC-RideValueAdd, FC-RideValueDeduct
FC-RideValueRemaining	FcFMStoredData		
FC-RideValueRemaining	FcInitialPOSParameters		Use at least one of the following: FC-MonetaryValueRemaining FC-RideValueRemaining FC-FareInstrumentID
FC-RideValueRemaining	FcRideTransaction		
FC-SubassemblyID	FcComponentEventInstance		
FC-SubassemblyType	FcComponentErrorDefinition		
FC-SubassemblyType	FcCountTypeDefinition		
FC-TimePeriodIndex	FcFareCharacterCost		
FC-TimePeriodIndex	FcFareExceptionCell	SEQUENCE OF	The time periods for when this exception is valid.
FC-TimePeriodIndex	FcTimePeriodEntry		
FC-TimePeriodIndex	FcTimePeriodTable	SEQUENCE OF	
FC-TimePeriodTableID	FcFareExceptionTable		The time period schedule which is used by this Fare Exception Table.
FC-TimePeriodTableID	FcFareTable		
FC-TimePeriodTableID	FcTimePeriodTable		
FC-TransactionDescription	FcFareTransaction		
FC-TransactionDescription	FcRideTransaction		
FC-TransactionResult	FcFareTransaction		
FC-TransactionResult	FcRideTransaction		
FcUseParameters	FcFinancialTransaction		
FcUseParameters	FcFMStoredData	SEQUENCE OF	
FC-ValueAdd	FcFareTransaction		

DE/Msg Name	Message Name	Data element syntax	Comment
FC-ValueAdd	FcUseParameters		Include at least one of the following: FC-ValueAdd, FC-ValueDeduct, FC-RideValueAdd, FC-RideValueDeduct
FC-ValueCount	FcComponentErrorCounter		
FC-ValueCount	FcValueCounter		
FC-ValueDeduct	FcFareExceptionCell		Either FC-FareMonetaryValue or FC-FareRideValue, or both shall be included.
FC-ValueDeduct	FcFareTransaction		
FC-ValueDeduct	FcUseParameters		Include at least one of the following: FC-ValueAdd, FC-ValueDeduct, FC-RideValueAdd, FC-RideValueDeduct
FC-ValueRemaining	FcFareTransaction		
OCTET STRING	FcFareCharacterCost		algorithm: executable or algorithm for calculating fare. The input parameters to this data element are part of FcFareTable: fare-table-parameters. Include in place of FC-FareRideValue and FC-FareMonetaryValue.
SCH-BlockName	FcPassInstrumentDefinition	SEQUENC OF	list-of-lines-accepted: the lines (groups of routes) on which the pass may be used.
SCH-BlockName	FcRideInstrumentDefinition	SEQUENCE OF	list-of-lines-accepted: the lines (groups of routes) on which the ride instrument may be used.

DE/Msg Name	Message Name	Data element syntax	Comment

SCH-DayType	FcTimePeriodEntry	CHOICE	CHOICE {
			CPT-CalendarDate,
			SCH-DayType
			}

SCH-RouteDirectionName	FcUseParameters		
SCH-RouteID	FcPassInstrumentDefinition	SEQUENCE OF	list-of-lines-accepted: The routes on which the pass may be used.
SCH-RouteID	FcRideInstrumentDefinition	SEQUENCE OF	list-of-lines-accepted: The routes on which the ride instrument may be used.
SCH-RouteID	FcUseParameters		
SCH-ServiceType	FcFareCharacterCost		
SCH-ServiceType	FcFareExceptionCell		The service type for which this exception is valid.
SCH-ServiceType	FcUseParameters		
SCH-TripType	FcUseParameters		
TIME	FcTimePeriodEntry		begin-time: beginning of time period
TIME	FcTimePeriodEntry		end-time: end of time period
UTF8String	FcFareTable		fare-algorithm-param: (open string) these are the base values of the table when an algorithm is specified in the FcFareCharacterCost record.

ANNEX B
ASN.1 Script Informative Annex

This annex is a script in ASN.1 format for compiling the required [CPT] business objects.

```
TCIP-FCDD   DEFINITIONS AUTOMATIC TAGS          ::=   BEGIN
-- EXPORTS Everything;

    IMPORTS IDENS, NAME, FOOTNOTE, DATETIME, TIME, UBYTE, USHORT, ULONG,
      IDENL
      FROM TCIP-Subtypes
   fc, TCIP-CLASS, CPT-ActivationDate, CPT-AgencyID, CPT-CalendarDate,
   CPT-DateTime, CPT-DeactivationDate, CPT-EmployeeID, CPT-FareZoneID,
   CPT-Footnote, CPT-Mode, CPT-SerialNumber, CPT-SeverityLevel,
   CPT-StopPointID, CPT-StopPointIDLong, CPT-UpperSerialNumber
      FROM TCIP-CPTDD
   SCH-BlockName, SCH-DayType, SCH-RouteDirectionName, SCH-RouteID,
   SCH-RouteName, SCH-ServiceType, SCH-TripType
      FROM TCIP-SCHDD;

fcdd OBJECT IDENTIFIER ::= {fc 1}

fc-AccountID-ID   OBJECT IDENTIFIER ::= {fcdd 1}
fc-AccountID     TCIP-CLASS::= {
FC-AccountID      IDENTIFIED BY     fc-AccountID-ID
WITH DESCRIPTION "The account or customer identification.  This data element
may be included on the fare media."}
FC-AccountID   ::=    IDENL

fc-AgencyReserveCode-ID     OBJECT IDENTIFIER::= { fcdd 2 }
fc-AgencyReserveCode     TCIP-CLASS::= {
FC-AgencyReserveCode      IDENTIFIED BY     fc-AgencyReserveCode-ID
WITH DESCRIPTION "A field to be defined by the agency for its own use
particularly as an encryption key."}
FC-AgencyReserveCode   ::=    OCTET STRING (SIZE(1..40))

fc-BadCardID-ID     OBJECT IDENTIFIER::= { fcdd 3 }
fc-BadCardID     TCIP-CLASS::= {
FC-BadCardID      IDENTIFIED BY     fc-BadCardID-ID
WITH DESCRIPTION "Identification of fare media of which the validity has been
canceled temporarily or permanently, due to loss of the media, technical
malfunction, no credit on bank account, offenses committed by customer, etc."}
FC-BadCardID   ::=    IDENL

fc-ComponentErrorDescription-ID     OBJECT IDENTIFIER::= { fcdd 4 }
fc-ComponentErrorDescription     TCIP-CLASS::= {
FC-ComponentErrorDescription      IDENTIFIED BY     fc-
ComponentErrorDescription-ID
WITH DESCRIPTION "The description of a class of errors that may occur in a
fare collection device."}
FC-ComponentErrorDescription   ::=    FOOTNOTE

fc-ComponentErrorType-ID     OBJECT IDENTIFIER::= { fcdd 5 }
fc-ComponentErrorType     TCIP-CLASS::= {
```

```
FC-ComponentErrorType      IDENTIFIED BY     fc-ComponentErrorType-ID
WITH DESCRIPTION "A type of error that may occur in a component, subassembly
or piece of equipment in a fare processing unit. "}
FC-ComponentErrorType   ::=    INTEGER {
bill-accept (1), -- bill accept
bill-count (2), -- bill count
bill-escrow (3), -- bill escrow
bill-operation (4), -- bill operation
bill-stacker (5), -- bill stacker
card-read-1 (6), -- card read (1st try)
card-read-2  (7), -- card read (2nd try)
card-read-3  (8), -- card read (3rd try)
card-reject  (9), -- card reject
card-write  (10), -- card write
coin-accept (11), -- coin accept
coin-count (12), -- coin count
coin-operation (13), -- coin operation
power-loss (14), -- power loss
feed (15), -- feed
transport (16), -- transport
printer (17) -- printer
-- 18-149 reserved
-- 150-245 local use
-- 246-255 error codes
} (0..255)

fc-ComponentErrorTypeID-ID     OBJECT IDENTIFIER::= { fcdd 6 }
fc-ComponentErrorTypeID     TCIP-CLASS::= {
FC-ComponentErrorTypeID      IDENTIFIED BY     fc-ComponentErrorTypeID-ID
WITH DESCRIPTION "A number which identifies a type of error with the equipment
from whence it comes."}
FC-ComponentErrorTypeID   ::=    IDENS

fc-ComponentEventID-ID     OBJECT IDENTIFIER::= { fcdd 7 }
fc-ComponentEventID     TCIP-CLASS::= {
FC-ComponentEventID      IDENTIFIED BY     fc-ComponentEventID-ID
WITH DESCRIPTION "A numeric representation of the status of a component being
reported."}
FC-ComponentEventID   ::=    IDENS

fc-ComponentEventType-ID     OBJECT IDENTIFIER::= { fcdd 8 }
fc-ComponentEventType     TCIP-CLASS::= {
FC-ComponentEventType      IDENTIFIED BY     fc-ComponentEventType-ID
WITH DESCRIPTION "A numeric representation for a report on the status of a
fare collection component."}
FC-ComponentEventType   ::=    INTEGER {
voltage-dropout  (1), -- voltage dropout
voltage-restored (2), -- voltage restored
probe-started  (3), -- probe started
probe-completed  (4), -- probe completed
cashbox-removed  (5), -- cashbox removed
cashbox-restored  (6), -- cashbox restored
cashbox-door-timeout  (7), -- cashbox door timeout
cashbox-opened-is  (8), -- cashbox opened in service
insufficient-fare  (9), -- insufficient fare accepted
coinbox-75-full  (10), -- coinbox 75% full
coinbox-full  (11), -- coinbox full
currencybox-75-full  (12), -- currency box 75% full
currencybox-under-75  (13), -- currency box less than 75% full
currencybox-full  (14), -- currency box full
```



```
cardpassbox-75-full  (15), -- card/pass box 75% full
cardpassbox-under-75  (16), -- card/pass box less than 75% full
cardpassbox-full  (17), -- card/pass box full
coin-dejam  (18), -- coin de-jam operated
farebox-manual-bypass  (19), -- farebox set in manual bypass
farebox-automatic  (20), -- farebox reset to automatic mode
pass-jam  (21), -- pass/transfer jam
pass-jam-cleared  (22), -- pass/transfer jam cleared
pass-currency-jam  (23), -- pass currency jam
maintenance-access-is  (24), -- maintenance access - in service
maintenance-access-oos  (25),  --maintenance access - out of service
alarm-module-failure  (26), -- alarm module failure
battery-failure  (27), -- battery failure
battery-low  (28), -- battery low
cardcapturebin-75-full  (29), -- card capture bin 75%  full
cardcapturebin-full  (30),  ---card capture bin full
card-stock-1-low  (31), -- Fare card stock type 1 is low
card-stock-1-out  (32), -- Fare card stock type 1 is out
card-stock-2-low  (33), -- Fare card stock type 2 is low
card-stock-2-out  (34), -- Fare card stock type 2 is out
card-stock-3-low  (35), -- Fare card stock type 3 is low
card-stock-3-out  (36), -- Fare card stock type 3 is out
card-stock-4-low (37), -- Fare card stock type 4 is low
card-stock-4-out (38), -- Fare card stock type 4 is out
card-stock-5-low (39), -- Fare card stock type 5 is low
card-stock-5-out (40), -- Fare card stock type 5 is out
card-stock-6-low (41), -- Fare card stock type 6 is low
card-stock-6-out (42), -- Fare card stock type 6 is out
clock-error  (43), -- Equipment controller board clock error
coin-acceptor-fault  (44), -- Coin acceptor fault
communications-loss  (45), -- Loss of communications with local devices
maintenance-door-open  (46), -- Maintenance door open
maintenance-door-closed  (47), -- Maintenance door closed
motion-sensor-alarm-on  (48), -- Motion sensor alarm triggered
power-reset  (49), -- Power reset
communications-lost  (50), -- Local station communications lost
receipt-low  (51), -- Receipt low
receipt-out  (52), -- Receipt out
credit-debit-failure  (53), -- credit/debit failure (out of service)
gate-failure  (54), -- gate failure (turnstile and parking)
banknote-validation-failure  (55) -- bank note validation failure
--  56 - 65399 reserved
--  65400 - 65525 local use
--  65526 - 65535 error codes
} (0..65535)

fc-ComponentID-ID     OBJECT IDENTIFIER::= { fcdd 9 }
fc-ComponentID     TCIP-CLASS::= {
FC-ComponentID      IDENTIFIED BY     fc-ComponentID-ID
WITH DESCRIPTION "A unique number assigned by the transit agency used to
identify a component or piece of equipment."}
FC-ComponentID   ::=    IDENS

fc-ComponentStatusType-ID     OBJECT IDENTIFIER::= { fcdd 10 }
fc-ComponentStatusType     TCIP-CLASS::= {
FC-ComponentStatusType      IDENTIFIED BY     fc-ComponentStatusType-ID
WITH DESCRIPTION "A numeric representation of the operational state of a
component."}
FC-ComponentStatusType   ::=    INTEGER {
in-service (1), -- In-service
```

```
out-of-service (2), -- Out of service
maintenance-mode (3), -- Maintenance mode
freewheel-mode (4), -- Freewheel mode (no pay)
diagnostic-mode (5), -- Diagnostic mode
alarm-triggered (6), -- Alarm triggered
gate-entry-only (7), -- Gate mode open for entry only
gate-exit-only (8), -- Gate mode open for exit only
gate-entry-and-exit (9) -- Gate mode open for entry/exit
 -- 10-149  reserved
 -- 150-245 local use
 -- 246-255 error codes
} (0..255)

fc-ComponentType-ID     OBJECT IDENTIFIER::= { fcdd 11 }
fc-ComponentType     TCIP-CLASS::= {
FC-ComponentType      IDENTIFIED BY     fc-ComponentType-ID
WITH DESCRIPTION "Specific equipment used in collecting, processing, vending
fare media."}
FC-ComponentType   ::=    INTEGER {
farebox (1), -- Farebox (fare collection unit)
farereader (2), -- Fare media reader (validator)
ticket-vending (3), -- Ticket vending machine
turnstile (4), -- Turnstile
other (5) -- Other
-- 6-255 reserved
} (0..255)

fc-ComponentTypeDescription-ID     OBJECT IDENTIFIER::= { fcdd 12 }
fc-ComponentTypeDescription     TCIP-CLASS::= {
FC-ComponentTypeDescription      IDENTIFIED BY     fc-
ComponentTypeDescription-ID
WITH DESCRIPTION "The description of fare collection, vending or processing
equipment. This field is required when fcEquipmentType code 'other' is used."}
FC-ComponentTypeDescription   ::=    FOOTNOTE

fc-CountTypeDescription-ID     OBJECT IDENTIFIER::= { fcdd 13 }
fc-CountTypeDescription     TCIP-CLASS::= {
FC-CountTypeDescription      IDENTIFIED BY     fc-CountTypeDescription-ID
WITH DESCRIPTION "The description of a component or subassembly that counts
the number of fare instrument transactions.  The definition of the
'transaction' is described in this data element."}
FC-CountTypeDescription   ::=    FOOTNOTE

fc-CountTypeID-ID     OBJECT IDENTIFIER::= { fcdd 14 }
fc-CountTypeID     TCIP-CLASS::= {
FC-CountTypeID      IDENTIFIED BY     fc-CountTypeID-ID
WITH DESCRIPTION "A unique number assigned by an agency which identifies a
definition of a the number of transactions of a subassembly or component."}
FC-CountTypeID   ::=    IDENS

fc-ExpirationDateTime-ID     OBJECT IDENTIFIER::= { fcdd 15 }
fc-ExpirationDateTime     TCIP-CLASS::= {
FC-ExpirationDateTime      IDENTIFIED BY     fc-ExpirationDateTime-ID
WITH DESCRIPTION "The day on which a fare instrument can no longer be used.
The instrument expires on this date regardless of whether the instrument
contains value."}
FC-ExpirationDateTime   ::=    DATETIME

fc-FareCharacterCostIndex-ID     OBJECT IDENTIFIER::= { fcdd 16 }
fc-FareCharacterCostIndex     TCIP-CLASS::= {
```



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FC-FareCharacterCostIndex      IDENTIFIED BY     fc-FareCharacterCostIndex-ID
WITH DESCRIPTION "A unique reference to a cell in a fare table that assigns a
fare (monetary or ride value) for a specific public transportation service.
The service is characterized by rider classification, service type, mode, time
period, point/point or zone/zone, and fare instrument used."}
FC-FareCharacterCostIndex   ::=    IDENS

fc-FareCost-ID     OBJECT IDENTIFIER::= { fcdd 17 }
fc-FareCost     TCIP-CLASS::= {
FC-FareCost      IDENTIFIED BY     fc-FareCost-ID
WITH DESCRIPTION "The cost (in currency) of a fare for transit service."}
FC-FareCost   ::=    ULONG

fc-FareDistanceIndex-ID     OBJECT IDENTIFIER::= { fcdd 18 }
fc-FareDistanceIndex     TCIP-CLASS::= {
FC-FareDistanceIndex      IDENTIFIED BY     fc-FareDistanceIndex-ID
WITH DESCRIPTION "A unique number that corresponds to a cell in a fare
distance table.  The index identifies an origin and destination stop point ID
pair."}
FC-FareDistanceIndex   ::=    IDENS

fc-FareDistanceTableID-ID     OBJECT IDENTIFIER::= { fcdd 19 }
fc-FareDistanceTableID     TCIP-CLASS::= {
FC-FareDistanceTableID      IDENTIFIED BY     fc-FareDistanceTableID-ID
WITH DESCRIPTION "An unique number assigned by a public transportation agency
to a table that contains origin-destination stop point id pairs."}
FC-FareDistanceTableID   ::=    IDENS

fc-FareDistanceType-ID     OBJECT IDENTIFIER::= { fcdd 20 }
fc-FareDistanceType     TCIP-CLASS::= {
FC-FareDistanceType      IDENTIFIED BY     fc-FareDistanceType-ID
WITH DESCRIPTION "The type of point to point distance that is specified.  Line
of sight refers to the straight line distance between two points; linear
distance is the distance traveled along a linear network between two points
(e.g., Main station via Elm street to Oak stop)."}
FC-FareDistanceType   ::=    INTEGER {
line-of-sight (1), -- line of sight
linear (2) -- linear
  -- 3-149 reserved
  -- 150-245 local use
  -- 246-255 error
} (0..255)

fc-FareExceptionCellIndex-ID     OBJECT IDENTIFIER::= { fcdd 21 }
fc-FareExceptionCellIndex     TCIP-CLASS::= {
FC-FareExceptionCellIndex      IDENTIFIED BY     fc-FareExceptionCellIndex-ID
WITH DESCRIPTION "A unique number that corresponds to a cell in a table of
fare
exceptions."}
FC-FareExceptionCellIndex   ::=    IDENS

fc-FareExceptionTableID-ID     OBJECT IDENTIFIER::= { fcdd 22 }
fc-FareExceptionTableID     TCIP-CLASS::= {
FC-FareExceptionTableID      IDENTIFIED BY     fc-FareExceptionTableID-ID
WITH DESCRIPTION "A unique number assigned to a table which defines exceptions
to the standard fare policy for transit service."}
FC-FareExceptionTableID   ::=    IDENS

fc-FareInstrumentID-ID     OBJECT IDENTIFIER::= { fcdd 23 }
fc-FareInstrumentID     TCIP-CLASS::= {
```

```
FC-FareInstrumentID      IDENTIFIED BY     fc-FareInstrumentID-ID
WITH DESCRIPTION "A number which is identifies a specific type of fare
instrument and possibly its rider characteristics."}
FC-FareInstrumentID   ::=    IDENS

fc-FareMediaID-nbr-ID     OBJECT IDENTIFIER::= { fcdd 24 }
fc-FareMediaID-nbr     TCIP-CLASS::= {
FC-FareMediaID-nbr      IDENTIFIED BY     fc-FareMediaID-nbr-ID
WITH DESCRIPTION "An unique number assigned as a suffix to each fare
instrument identifier (fcFareInstrumentID) which is assigned by a financial
authority (e.g., transit agency) and recognized as payment for transit
services."}
FC-FareMediaID-nbr   ::=    IDENL

fc-FareMediaID-txt-ID     OBJECT IDENTIFIER::= { fcdd 25 }
fc-FareMediaID-txt     TCIP-CLASS::= {
FC-FareMediaID-txt      IDENTIFIED BY     fc-FareMediaID-txt-ID
WITH DESCRIPTION "An unique character string assigned as a prefix to each fare
instrument identifier (FC-FareInstrumentID) which is assigned by a financial
authority (e.g., transit agency) and recognized as payment for transit
services."}
FC-FareMediaID-txt   ::=    UTF8String (SIZE(1..2))

fc-FareMediaOtherDescription-ID     OBJECT IDENTIFIER::= { fcdd 26 }
fc-FareMediaOtherDescription     TCIP-CLASS::= {
FC-FareMediaOtherDescription      IDENTIFIED BY     fc-
FareMediaOtherDescription-ID
WITH DESCRIPTION "The description of an exception to fare  instruments other
than monetary, ride and pass."}
FC-FareMediaOtherDescription   ::=    FOOTNOTE

fc-FareMediaOtherID-ID     OBJECT IDENTIFIER::= { fcdd 27 }
fc-FareMediaOtherID     TCIP-CLASS::= {
FC-FareMediaOtherID      IDENTIFIED BY     fc-FareMediaOtherID-ID
WITH DESCRIPTION "An unique identifier associated with a fare instrument which
does not fall into monetary, ride or pass categories.  (This may include an
employee or retired identification card.)"}
FC-FareMediaOtherID   ::=    UBYTE

fc-FareTableID-ID     OBJECT IDENTIFIER::= { fcdd 28 }
fc-FareTableID     TCIP-CLASS::= {
FC-FareTableID      IDENTIFIED BY     fc-FareTableID-ID
WITH DESCRIPTION "A unique number assigned to a table which defines the fares
for transit service."}
FC-FareTableID   ::=    IDENS

fc-FareTimeValue-ID     OBJECT IDENTIFIER::= { fcdd 29 }
fc-FareTimeValue     TCIP-CLASS::= {
FC-FareTimeValue      IDENTIFIED BY     fc-FareTimeValue-ID
WITH DESCRIPTION "The duration (in days) over which a pass instrument has
value."}
FC-FareTimeValue   ::=    USHORT


fc-FareZoneIndex-ID     OBJECT IDENTIFIER::= { fcdd 30 }
fc-FareZoneIndex     TCIP-CLASS::= {
FC-FareZoneIndex      IDENTIFIED BY     fc-FareZoneIndex-ID
WITH DESCRIPTION "A unique number that corresponds to a cell in a fare zone
table.  The index identifies an origin and destination zone pair."}
FC-FareZoneIndex   ::=    IDENS
```

```
fc-FareZoneTableID-ID     OBJECT IDENTIFIER::= { fcdd 31 }
fc-FareZoneTableID     TCIP-CLASS::= {
FC-FareZoneTableID      IDENTIFIED BY     fc-FareZoneTableID-ID
WITH DESCRIPTION "An unique number assigned by a public transportation agency
to a table that contains origin-destination zone "}
FC-FareZoneTableID   ::=    IDENS

fc-FinancialTransactionID-ID     OBJECT IDENTIFIER::= { fcdd 32 }
fc-FinancialTransactionID     TCIP-CLASS::= {
FC-FinancialTransactionID      IDENTIFIED BY     fc-FinancialTransactionID-ID
WITH DESCRIPTION "A unique number that identifies a financial transaction."}
FC-FinancialTransactionID   ::=    IDENL

fc-FinancialTransactionType-ID     OBJECT IDENTIFIER::= { fcdd 33 }
fc-FinancialTransactionType     TCIP-CLASS::= {
FC-FinancialTransactionType      IDENTIFIED BY     fc-
FinancialTransactionType-ID
WITH DESCRIPTION "Lists the types of financial transactions."}
FC-FinancialTransactionType   ::=    INTEGER {
money-received (1),  --Money received
money-dispensed (2),  --Money dispensed
electronic-credit (3),  --Electronic - credit
electronic-debit (4),  --Electronic - debit
smart-card (5),  --Smart card
combo (6),  --Combo (split payment)
transit-check (7)  --Transit check
  -- 8-149 reserved
  -- 150-245 local use
  -- 246-255 error codes
} (0..255)

fc-FinancialTransactionTypeDescription-ID     OBJECT IDENTIFIER::= { fcdd 34 }
fc-FinancialTransactionTypeDescription     TCIP-CLASS::= {
FC-FinancialTransactionTypeDescription  IDENTIFIED BY fc-
FinancialTransactionTypeDescription-ID
WITH DESCRIPTION "A description of the type of financial transaction."}
FC-FinancialTransactionTypeDescription   ::=    FOOTNOTE

fc-FIStandard-ID     OBJECT IDENTIFIER::= { fcdd 35 }
fc-FIStandard     TCIP-CLASS::= {
FC-FIStandard      IDENTIFIED BY     fc-FIStandard-ID
WITH DESCRIPTION "A list of standards related to financial instruments.  This
list includes electronic and non-electronic fare. "}
FC-FIStandard   ::=    INTEGER {
none  (1), -- none
iso-8583-1995 (2), -- ISO 8583:1993 (parts 1-3)
iso-4909-1987 (3), -- ISO 4909:1987
iso-9992-1990 (4), -- ISO 9992:1990 (parts 1 and 2)
vei-1997 (5) -- VEI:1997
   -- tbd
   -- 10-149  reserved
   -- 150-245 local use
   -- 246-255 error codes
} (0..255)

fc-Footnote-ID  OBJECT IDENTIFIER::= { fcdd 36 }
fc-Footnote   TCIP-CLASS::= {
FC-Footnote IDENTIFIED BY  fc-Footnote-ID
WITH DESCRIPTION "A comment related to the Fare Policy." }
```

```
FC-Footnote ::= FOOTNOTE

fc-MonetaryInstrumentAuthority-ID     OBJECT IDENTIFIER::= { fcdd 37 }
fc-MonetaryInstrumentAuthority     TCIP-CLASS::= {
FC-MonetaryInstrumentAuthority      IDENTIFIED BY     fc-
MonetaryInstrumentAuthority-ID
WITH DESCRIPTION "A list of authorities and global currencies as specified by
a three character ISO 4217 currency code or six character cptAgencyID.  The
ISO 4217 format includes a two character country code based on ISO 3166 plus a
one-character currency designator."}
FC-MonetaryInstrumentAuthority   ::=    UTF8String ( SIZE(1..6))

fc-MonetaryInstrumentDescription-ID     OBJECT IDENTIFIER::= { fcdd 38 }
fc-MonetaryInstrumentDescription     TCIP-CLASS::= {
FC-MonetaryInstrumentDescription      IDENTIFIED BY     fc-
MonetaryInstrumentDescription-ID
WITH DESCRIPTION "A physical description of the cash or fare instrument.  This
includes size (e.g., dimensions, diameter), color, monetary value and
compliance with the specific magnetic stripe standard."}
FC-MonetaryInstrumentDescription   ::=    FOOTNOTE

fc-MonetaryInstrumentType-ID     OBJECT IDENTIFIER::= { fcdd 39 }
fc-MonetaryInstrumentType     TCIP-CLASS::= {
FC-MonetaryInstrumentType      IDENTIFIED BY     fc-MonetaryInstrumentType-ID
WITH DESCRIPTION "The physical type of Monetary Instrument."}
FC-MonetaryInstrumentType   ::=    INTEGER {
bill (1),  --bill
coin (2),  --coin
token (3),  --token
ticket (4),  --ticket
debit (5), -- debit: money is in acct and transfered to acct; external to
           -- the transit agency
stored-value (6), --stored value: prepaid cash; internal cash instrument
            --issued by property
charge (7), -- charge:  federal institution extends credit
hybrid (8),  --hybrid
transit-check (9),  -- transit check
check-card (10)  --check card
     --  11-155 reserved
     --  156-255 local use
} (0..255)

fc-MonetaryInstrumentTypeID-ID     OBJECT IDENTIFIER::= { fcdd 40 }
fc-MonetaryInstrumentTypeID     TCIP-CLASS::= {
FC-MonetaryInstrumentTypeID      IDENTIFIED BY     fc-
MonetaryInstrumentTypeID-ID
WITH DESCRIPTION "An identification number associated with a type of monetary
instrument used for fare payment.  Cash (bills and coins), tokens and tickets
may be assigned an identifier."}
FC-MonetaryInstrumentTypeID   ::=    UBYTE

fc-MonetaryInstrumentValue-ID     OBJECT IDENTIFIER::= { fcdd 41 }
fc-MonetaryInstrumentValue     TCIP-CLASS::= {
FC-MonetaryInstrumentValue  IDENTIFIED BY  fc-MonetaryInstrumentValue-ID
WITH DESCRIPTION "The monetary value of the currency based on one hundredth of
the currency designator.  Token, ticket, and pass are based on the currency of
the country in which the agency resides."}
FC-MonetaryInstrumentValue   ::=    ULONG

fc-MonetaryValueRemaining-ID     OBJECT IDENTIFIER::= { fcdd 42 }
```



```
fc-MonetaryValueRemaining     TCIP-CLASS::= {
FC-MonetaryValueRemaining      IDENTIFIED BY     fc-MonetaryValueRemaining-ID
WITH DESCRIPTION "The monetary value remaining on a fare media after the
transaction is completed.  The monetary authority and  currency is specified
by FC-MonetaryInstrumentTypeID.  The default value is in US dollars."}
FC-MonetaryValueRemaining   ::=    ULONG

fc-NumberOfRiders-ID     OBJECT IDENTIFIER::= { fcdd 43 }
fc-NumberOfRiders     TCIP-CLASS::= {
FC-NumberOfRiders      IDENTIFIED BY     fc-NumberOfRiders-ID
WITH DESCRIPTION "The number of riders who use the same fare media for a given
customer trip."}
FC-NumberOfRiders   ::=    UBYTE

fc-PassInstrumentDescription-ID     OBJECT IDENTIFIER::= { fcdd 44 }
fc-PassInstrumentDescription     TCIP-CLASS::= {
FC-PassInstrumentDescription      IDENTIFIED BY     fc-
PassInstrumentDescription-ID
WITH DESCRIPTION "The description of the pass instrument."}
FC-PassInstrumentDescription   ::=    FOOTNOTE

fc-PassInstrumentID-ID     OBJECT IDENTIFIER::= { fcdd 45 }
fc-PassInstrumentID     TCIP-CLASS::= {
FC-PassInstrumentID      IDENTIFIED BY     fc-PassInstrumentID-ID
WITH DESCRIPTION "A fare instrument which contains unlimited number of rides
over a period of time, e.g., monthly, weekly and daily passes."}
FC-PassInstrumentID   ::=    UBYTE

fc-PassInstrumentType-ID     OBJECT IDENTIFIER::= { fcdd 46 }
fc-PassInstrumentType     TCIP-CLASS::= {
FC-PassInstrumentType      IDENTIFIED BY     fc-PassInstrumentType-ID
WITH DESCRIPTION "A list of pass instrument types."}
FC-PassInstrumentType   ::=    INTEGER {
mag-stripe (1),  --Magnetic stripe
flash-pass (2),  --Flash pass
transit-check (3),  --Transit check
smart-card (4)  --Smart card
--  5-255 reserved
} (0..255)

fc-PassValue-ID     OBJECT IDENTIFIER::= { fcdd 47 }
fc-PassValue     TCIP-CLASS::= {
FC-PassValue      IDENTIFIED BY     fc-PassValue-ID
WITH DESCRIPTION "The valid duration in hours of a pass instrument.  (Maximum
time period is one year.)"}
FC-PassValue   ::=    USHORT

fc-PrinterPosition-ID     OBJECT IDENTIFIER::= { fcdd 48 }
fc-PrinterPosition     TCIP-CLASS::= {
FC-PrinterPosition      IDENTIFIED BY     fc-PrinterPosition-ID
WITH DESCRIPTION "The position on the fare media on which a printer recorded
this transaction or this set of FcUseParameters."}
FC-PrinterPosition   ::=    UBYTE

fc-RideInstrumentDescription-ID     OBJECT IDENTIFIER::= { fcdd 49 }
fc-RideInstrumentDescription     TCIP-CLASS::= {
FC-RideInstrumentDescription      IDENTIFIED BY     fc-
RideInstrumentDescription-ID
WITH DESCRIPTION "A physical description of the fare instrument."}
FC-RideInstrumentDescription   ::=    FOOTNOTE
```

```
fc-RideInstrumentID-ID     OBJECT IDENTIFIER::= { fcdd 50 }
fc-RideInstrumentID     TCIP-CLASS::= {
FC-RideInstrumentID      IDENTIFIED BY     fc-RideInstrumentID-ID
WITH DESCRIPTION "An identification number associated with a type of fare
instrument used for fare payment.  The value of the instrument is based on the
number of rides (versus cash value)."}
FC-RideInstrumentID   ::=    UBYTE

fc-RideInstrumentType-ID     OBJECT IDENTIFIER::= { fcdd 51 }
fc-RideInstrumentType     TCIP-CLASS::= {
FC-RideInstrumentType      IDENTIFIED BY     fc-RideInstrumentType-ID
WITH DESCRIPTION "The physical type of the Fare Instrument."}
FC-RideInstrumentType   ::=    INTEGER {
token (1),  --token
ticket (2),  --ticket
pass-fare-card (3),  --pass/fare card
transit-check (4)  --transit check
 -- 5-155 reserved
 -- 156-255 local use
} (0..255)

fc-RiderClassDescription-ID     OBJECT IDENTIFIER::= { fcdd 52 }
fc-RiderClassDescription     TCIP-CLASS::= {
FC-RiderClassDescription      IDENTIFIED BY  fc-RiderClassDescription-ID
WITH DESCRIPTION "The decription of a rider classification.  This data element
is required when local use codes are used for FC-RiderClassification."}
FC-RiderClassDescription   ::=    FOOTNOTE

fc-RiderClassification-ID     OBJECT IDENTIFIER::= { fcdd 53 }
fc-RiderClassification     TCIP-CLASS::= {
FC-RiderClassification      IDENTIFIED BY     fc-RiderClassification-ID
WITH DESCRIPTION "A means of classifying the types of riders on public
transportation vehicles."}
FC-RiderClassification   ::=    INTEGER {
regular (1),  --regular
senior (2),  --senior
child (3),  --child
student (4),  --student
youth (5),  --youth
ada-customer (6),  --ADA customer
promotional (7),  --promotional
employee (8),  --employee
retired-employee (9),  --retired employee
public-assistance-customer (10)  --public assistance customer
 -- 11-155 reserved
 -- 156-255 local use
} (0..255)

fc-RidersOnFareInstrument-ID     OBJECT IDENTIFIER::= { fcdd 54 }
fc-RidersOnFareInstrument     TCIP-CLASS::= {
FC-RidersOnFareInstrument      IDENTIFIED BY fc-RidersOnFareInstrument-ID
WITH DESCRIPTION "The number of riders who used the fare instrument to enter
an access point (or PT vehicle) at the same time."}
FC-RidersOnFareInstrument   ::=    UBYTE

fc-RidersOnFIMax-ID     OBJECT IDENTIFIER::= { fcdd 55 }
fc-RidersOnFIMax     TCIP-CLASS::= {
FC-RidersOnFIMax      IDENTIFIED BY     fc-RidersOnFIMax-ID
```



```
WITH DESCRIPTION "The number of riders who are allowed to enter an PT stop
point (or vehicle) at the same time and using the same fare media."}
FC-RidersOnFIMax   ::=    UBYTE

fc-RideValue-ID     OBJECT IDENTIFIER::= { fcdd 56 }
fc-RideValue     TCIP-CLASS::= {
FC-RideValue      IDENTIFIED BY     fc-RideValue-ID
WITH DESCRIPTION "The number of rides available on a ride instrument.  The
rides may be specified for specific transit service (mode, route, line), day
type, service type, rider classification, etc."}
FC-RideValue   ::=    UBYTE


fc-RideValueAdd-ID     OBJECT IDENTIFIER::= { fcdd 57 }
fc-RideValueAdd     TCIP-CLASS::= {
FC-RideValueAdd      IDENTIFIED BY     fc-RideValueAdd-ID
WITH DESCRIPTION "The number of one way trips on a PT vehicle added to a fare
instrument during a transaction.  The ride value is based on the definition of
the ride instrument (i.e., fcRideInstrumentID)."}
FC-RideValueAdd   ::=    UBYTE

fc-RideValueDeduct-ID     OBJECT IDENTIFIER::= { fcdd 58 }
fc-RideValueDeduct     TCIP-CLASS::= {
FC-RideValueDeduct      IDENTIFIED BY     fc-RideValueDeduct-ID
WITH DESCRIPTION "The number of one way trips on a PT vehicle deducted from a
fare instrument during a transaction.  The ride value is based on the
definition of the ride instrument (i.e., fcRideInstrumentID)."}
FC-RideValueDeduct   ::=    UBYTE

fc-RideValueRemaining-ID     OBJECT IDENTIFIER::= { fcdd 59 }
fc-RideValueRemaining     TCIP-CLASS::= {
FC-RideValueRemaining      IDENTIFIED BY     fc-RideValueRemaining-ID
WITH DESCRIPTION "The number of one way trips on a PT vehicle remaining on a
fare instrument after a transaction.  The ride value is based on the
definition of the ride instrument (i.e., fcRideInstrumentID)."}
FC-RideValueRemaining   ::=    USHORT

fc-SubassemblyID-ID     OBJECT IDENTIFIER::= { fcdd 60 }
fc-SubassemblyID     TCIP-CLASS::= {
FC-SubassemblyID      IDENTIFIED BY     fc-SubassemblyID-ID
WITH DESCRIPTION "A unique string assigned by the transit agency used to
identify a subassembly or part of a component."}
FC-SubassemblyID   ::=    UTF8String

fc-SubassemblyType-ID     OBJECT IDENTIFIER::= { fcdd 61 }
fc-SubassemblyType     TCIP-CLASS::= {
FC-SubassemblyType      IDENTIFIED BY     fc-SubassemblyType-ID
WITH DESCRIPTION "Devices contained in larger systems in fare collection or
vending machines."}
FC-SubassemblyType   ::=    INTEGER {
recycled-coin-hopper (1),  --recycled coin hopper
recycled-bill-hopper (2),  --recycled bill hopper
change-storage (3),  --change storage unit
coin-bill-counter (4),  --coin/bill counter
coin-hopper (5),  --coin hopper
bill-hopper (6),  --bill hopper
coin-bill-hopper (7),  --coin/bill hopper
coin-mechanism (8),  --coin mechanism
bill-acceptor (9),  --bill acceptor
ticket-supply (10)  --ticket supply
```

```
-- 11- 149 reserved
-- 150 -245 local use
-- 246-255 error codes
} (0..255)

fc-SubassemblyTypeDescription-ID     OBJECT IDENTIFIER::= { fcdd 62 }
fc-SubassemblyTypeDescription     TCIP-CLASS::= {
FC-SubassemblyTypeDescription      IDENTIFIED BY     fc-
SubassemblyTypeDescription-ID
WITH DESCRIPTION "The description of a subassembly, particularly if
fcSubassemblyType is referenced by a local use code (150, 255). "}
FC-SubassemblyTypeDescription   ::=    FOOTNOTE

fc-TimePeriodIndex-ID     OBJECT IDENTIFIER::= { fcdd 63 }
fc-TimePeriodIndex     TCIP-CLASS::= {
FC-TimePeriodIndex      IDENTIFIED BY     fc-TimePeriodIndex-ID
WITH DESCRIPTION "A unique number that identifies a cell in a time period
table.  The index represents a time period over the course of a day type or
specific calendar days."}
FC-TimePeriodIndex   ::=    IDENS

fc-TimePeriodTableID-ID     OBJECT IDENTIFIER::= { fcdd 64 }
fc-TimePeriodTableID     TCIP-CLASS::= {
FC-TimePeriodTableID      IDENTIFIED BY     fc-TimePeriodTableID-ID
WITH DESCRIPTION "An unique number assigned by a public transportation agency
to a table that defines time periods over the course of a day type or specific
calendar days."}
FC-TimePeriodTableID   ::=    IDENS

fc-TransactionDescription-ID     OBJECT IDENTIFIER::= { fcdd 65 }
fc-TransactionDescription     TCIP-CLASS::= {
FC-TransactionDescription      IDENTIFIED BY     fc-TransactionDescription-ID
WITH DESCRIPTION "A description of a fare transaction."}
FC-TransactionDescription   ::=    FOOTNOTE

fc-TransactionResult-ID     OBJECT IDENTIFIER::= { fcdd 66 }
fc-TransactionResult     TCIP-CLASS::= {
FC-TransactionResult      IDENTIFIED BY     fc-TransactionResult-ID
WITH DESCRIPTION "Series of outcomes related to processing fare instruments."}
FC-TransactionResult   ::=    INTEGER {
comment  (0), -- comment
successful-transaction  (1), -- successful transaction
-- 2-9  reserved
read-error  (10), -- read error
-- 11-19 reserved
write-error  (20), -- write error
-- 21-29 reserved
verify-error  (30), -- verify error
-- 31-39  reserved
validation-status-error  (40), -- validation status error
-- 41-49 reserved
status-error  (50), -- status error
-- 51-59 reserved
other  (60) -- other
-- 61-255 reserved
} (0..255)

fc-ValueAdd-ID     OBJECT IDENTIFIER::= { fcdd 67 }
fc-ValueAdd     TCIP-CLASS::= {
FC-ValueAdd      IDENTIFIED BY     fc-ValueAdd-ID
```



```
WITH DESCRIPTION "Monetary amount added to the fare media during a
transaction.  The monetary authority and currency is based on the FC-
MonetaryInstrumentTypeID.  The default value is in U.S. dollars ($mmm.cc)"}
FC-ValueAdd   ::=    USHORT

fc-ValueCount-ID     OBJECT IDENTIFIER::= { fcdd 68 }
fc-ValueCount     TCIP-CLASS::= {
FC-ValueCount      IDENTIFIED BY     fc-ValueCount-ID
WITH DESCRIPTION "The number of transactions counted by a device."}
FC-ValueCount   ::=    USHORT

fc-ValueDeduct-ID     OBJECT IDENTIFIER::= { fcdd 69 }
fc-ValueDeduct     TCIP-CLASS::= {
FC-ValueDeduct      IDENTIFIED BY     fc-ValueDeduct-ID
WITH DESCRIPTION "The monetary amount deducted from the fare media during a
transaction. The monetary value is based on the FC-MonetaryInstrumentTypeID.
The default authority and currency is in US dollars (mmm.cc)."}
FC-ValueDeduct   ::=    USHORT

fc-ValueRemaining-ID     OBJECT IDENTIFIER::= { fcdd 70 }
fc-ValueRemaining     TCIP-CLASS::= {
FC-ValueRemaining      IDENTIFIED BY     fc-ValueRemaining-ID
WITH DESCRIPTION "The monetary value stored on electronic media (e.g., smart
card, magnetic storage card) following a transaction.  The monetary authority
and currency is based on the FC-MonetaryInstrumentTypeID.  The default value
is in U.S. dollars ($mmm.cc)."}
FC-ValueRemaining   ::=    USHORT

-- *** FARE COLLECTION MESSAGES *** ------------------------------------

fcBadCardList-ID  OBJECT IDENTIFIER ::=  { fc 2 }
fcBadCardList  TCIP-CLASS ::=  {
FcBadCardList  IDENTIFIED BY  fcBadCardList-ID
  WITH DESCRIPTION "  A list of sequences of fare media of which the validity
has been canceled temporarily or permanently due to loss of the instrument,
technical malfunction, no credit on account, offenses committed by customer or
other reason." }
FcBadCardList ::= SEQUENCE OF  FcFareMediaPair

fcComponentErrorCounter-ID OBJECT IDENTIFIER ::=  { fc 3 }
fcComponentErrorCounter  TCIP-CLASS ::=  {
  FcComponentErrorCounter  IDENTIFIED BY  fcComponentErrorCounter-ID
  WITH DESCRIPTION "  The number of specific type of errors that occur on a
given subassembly." }
FcComponentErrorCounter ::= SEQUENCE{
    id  FC-ComponentErrorTypeID,
    value-count  FC-ValueCount,
    start-datetime     CPT-DateTime,
    end-datetime      CPT-DateTime
 }

fcComponentErrorDefinition-ID OBJECT IDENTIFIER ::=  { fc 4 }
fcComponentErrorDefinition  TCIP-CLASS ::=  {
  FcComponentErrorDefinition  IDENTIFIED BY  fcComponentErrorDefinition-ID
  WITH DESCRIPTION "  The definition of a type of error that may occur on a
given type of a component or subassembly." }
FcComponentErrorDefinition  ::= SEQUENCE {
    id  FC-ComponentErrorTypeID,
    type  FC-ComponentErrorType,
    description  FC-ComponentErrorDescription  OPTIONAL,
```

```
    subassembly-type  FC-SubassemblyType,
    serial-number  CPT-SerialNumber,
    component-id  FC-ComponentID                                    OPTIONAL
}

fcComponentEventInstance-ID OBJECT IDENTIFIER ::=  { fc 5 }
fcComponentEventInstance  TCIP-CLASS ::=  {
  FcComponentEventInstance  IDENTIFIED BY  fcComponentEventInstance-ID
  WITH DESCRIPTION "A message that describes an event that occurs in a fare
collection component or subassembly."}
FcComponentEventInstance  ::= SEQUENCE {
      id  FC-ComponentEventID,
      type  FC-ComponentEventType,
      status-begin    CPT-DateTime,  --  date/time event occurred
      status-end    CPT-DateTime OPTIONAL,  -- date/time event concluded
      list-of-status-types  SEQUENCE OF FC-ComponentStatusType,
      severity-level  CPT-SeverityLevel,
      component-id  FC-ComponentID,
      subassembly-id  FC-SubassemblyID   OPTIONAL,
      serial-number  CPT-SerialNumber    OPTIONAL,   -- refers to component
      footnote  CPT-Footnote             OPTIONAL
}

fcComponentEventStatusReport-ID OBJECT IDENTIFIER ::=  { fc 6 }
fcComponentEventStatusReport  TCIP-CLASS ::=  {
  FcComponentEventStatusReport  IDENTIFIED BY  fcComponentEventStatusReport-ID
  WITH DESCRIPTION "  An update of a previous message that described a
component event (FcComponentEventInstance)." }
FcComponentEventStatusReport  ::= SEQUENCE {
      id  FC-ComponentEventID,
      list-of-status-types  SEQUENCE OF FC-ComponentStatusType,
      datetime  CPT-DateTime,       -- date/time update occurred
      footnote  CPT-Footnote  OPTIONAL
}

fcCountTypeDefinition-ID OBJECT IDENTIFIER ::=  { fc 7 }
fcCountTypeDefinition  TCIP-CLASS ::=  {
  FcCountTypeDefinition  IDENTIFIED BY  fcCountTypeDefinition-ID
  WITH DESCRIPTION "  The definition of  a component or subassembly that
counts the number of transactions.  Note:  A user, operator or vendor shall
define the term 'transaction' as part of the FC-CountTypeDescription data
element." }
FcCountTypeDefinition  ::= SEQUENCE {
     id  FC-CountTypeID,
     subassembly-type  FC-SubassemblyType,
     component-id  FC-ComponentID,
     description  FC-CountTypeDescription,
     serial-number  CPT-SerialNumber,
     upper-serial-number CPT-UpperSerialNumber  OPTIONAL
}

fcFareCharacterCost-ID OBJECT IDENTIFIER ::=  { fc 8 }
fcFareCharacterCost  TCIP-CLASS ::=  {
  FcFareCharacterCost  IDENTIFIED BY  fcFareCharacterCost-ID
  WITH DESCRIPTION "  The fare (monetary or ride value, or algorithm for
calculating value) required for specific public transportation services
provided to various rider types and customers using various types of fare
instruments during different time periods of day or date." }
FcFareCharacterCost  ::= SEQUENCE {
      index  FC-FareCharacterCostIndex,
```

```
      rider-classification  FC-RiderClassification,
      service-type   SCH-ServiceType              OPTIONAL,
      time-period-index  FC-TimePeriodIndex          OPTIONAL,
      fare-type-index
           CHOICE { fare-zone-index  FC-FareZoneIndex,
                fare-distance-index  FC-FareDistanceIndex }     OPTIONAL,
      list-of-fare-instrument-ids  SEQUENCE OF FC-FareInstrumentID,
      monetary-value  FC-FareCost        OPTIONAL,
      ride-value  FC-RideValue                OPTIONAL,
      algorithm           OCTET STRING    OPTIONAL
   -- (executable or algorithm for calculating fare)
}  (WITH COMPONENTS{..., monetary-value PRESENT}|
    WITH COMPONENTS{..., ride-value PRESENT} |
   WITH COMPONENTS{..., algorithm PRESENT})

fcFareDistanceTable-ID OBJECT IDENTIFIER ::=  { fc 9 }
fcFareDistanceTable  TCIP-CLASS ::=  {
  FcFareDistanceTable  IDENTIFIED BY  fcFareDistanceTable-ID
  WITH DESCRIPTION "  A table that defines the distance between stop point
pairs.  The distance may be based on the fare distance type (e.g., line of
sight, linear network)" }
FcFareDistanceTable  ::= SEQUENCE {
      id  FC-FareDistanceTableID,
      type  FC-FareDistanceType,
     activation-datetime  CPT-DateTime,
     list-of-fare-cell-indices  SEQUENCE OF  FC-FareDistanceIndex
}

fcFareDistanceTableEntry-ID OBJECT IDENTIFIER ::=  { fc 10 }
fcFareDistanceTableEntry  TCIP-CLASS ::=  {
  FcFareDistanceTableEntry  IDENTIFIED BY  fcFareDistanceTableEntry-ID
  WITH DESCRIPTION "  An entry into a distance-based boarding-alighting
matrix.  The boarding and alighting points are defined by existing,
operational stop points.  Direction is implied by boarding and alighting
points." }
FcFareDistanceTableEntry  ::= SEQUENCE {
     index  FC-FareDistanceIndex,
     boarding-stop-point-id     CPT-StopPointID,
     alighting-stop-point-id     CPT-StopPointID
}

fcFareExceptionCell-ID OBJECT IDENTIFIER ::=  { fc 11 }
fcFareExceptionCell  TCIP-CLASS ::=  {
  FcFareExceptionCell  IDENTIFIED BY  fcFareExceptionCell-ID
  WITH DESCRIPTION "  A record that contains an exception to a fare table.
This exception is based on a trip from one point to another, and is part of
FcFareExceptionTable" }
FcFareExceptionCell  ::= SEQUENCE {
     index  FC-FareExceptionCellIndex,
     boarding-stop-point-id   CPT-StopPointID,
     alighting-stop-point-id CPT-StopPointID     OPTIONAL,
     footnote  FC-Footnote,
     service-type  SCH-ServiceType                  OPTIONAL,
     mode  CPT-Mode                                 OPTIONAL,
     list-of-time-period-indices SEQUENCE OF FC-TimePeriodIndex  OPTIONAL,
     monetary-instrument-id  FC-MonetaryInstrumentTypeID     OPTIONAL,
     ride-instrument-id  FC-RideInstrumentID             OPTIONAL,
     pass-instrument-id  FC-PassInstrumentID            OPTIONAL,
     fare-media-other-id  FC-FareMediaOtherID          OPTIONAL,
     money-deduct  FC-ValueDeduct                   OPTIONAL,
```

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     ride-deduct  FC-RideValueDeduct           OPTIONAL
}  (WITH COMPONENTS{..., monetary-instrument-id, money-deduct PRESENT}|
    WITH COMPONENTS{..., ride-instrument-id, money-deduct PRESENT} |
    WITH COMPONENTS{..., pass-instrument-id, money-deduct PRESENT} |
   WITH COMPONENTS{..., fare-media-other-id, money-deduct PRESENT}|
   WITH COMPONENTS{..., monetary-instrument-id, ride-deduct PRESENT}|
    WITH COMPONENTS{..., ride-instrument-id, ride-deduct PRESENT} |
    WITH COMPONENTS{..., pass-instrument-id, ride-deduct PRESENT} |
    WITH COMPONENTS{..., fare-media-other-id, ride-deduct PRESENT} )

fcFareExceptionTable-ID OBJECT IDENTIFIER ::=  { fc 12 }
fcFareExceptionTable  TCIP-CLASS ::=  {
  FcFareExceptionTable  IDENTIFIED BY  fcFareExceptionTable-ID
  WITH DESCRIPTION "A table which lists all the exceptions to a given fare
structure." }
FcFareExceptionTable  ::= SEQUENCE {
     id  FC-FareExceptionTableID,
     activation-date CPT-ActivationDate,
     deactivation-date  CPT-DeactivationDate  OPTIONAL,
     table-id  FC-FareTableID    OPTIONAL,
                  -- index identifying  exception to a fare table
     time-period-table-id  FC-TimePeriodTableID  OPTIONAL,
     agency-id CPT-AgencyID   OPTIONAL,   -- that accepts exception
     list-of-fare-cell-indices  SEQUENCE OF  FC-FareExceptionCellIndex
}

fcFareInstrument-ID OBJECT IDENTIFIER ::=  { fc 13 }
fcFareInstrument  TCIP-CLASS ::=  {
  FcFareInstrument  IDENTIFIED BY  fcFareInstrument-ID
  WITH DESCRIPTION "  The definition of a valid fare instrument that can be
used by a specified public transportation service.  A fare instrument may be
defined as multiple value instruments, e.g.,  ten cents with a senior pass." }
FcFareInstrument  ::= SEQUENCE {
    id  FC-FareInstrumentID,
    agency-id  CPT-AgencyID,
    monetary-instrument-type-id  FC-MonetaryInstrumentTypeID   OPTIONAL,
    ride-instrument-id  FC-RideInstrumentID  OPTIONAL,
    pass-instrument-id  FC-PassInstrumentID  OPTIONAL,
    fare-media-other-id  FC-FareMediaOtherID OPTIONAL,
    riders-on-fi-max  FC-RidersOnFIMax       OPTIONAL,
    activation-datetime  CPT-DateTime  OPTIONAL,
    expiration-datetime  FC-ExpirationDateTime                   OPTIONAL,
    list-of-fi-standards  SEQUENCE OF FC-FIStandard OPTIONAL,
    instrument-physical-dimensions   FOOTNOTE   OPTIONAL
}     (WITH COMPONENTS {..., monetary-instrument-type-id PRESENT} |
      WITH COMPONENTS {..., ride-instrument-id PRESENT} |
      WITH COMPONENTS {..., pass-instrument-id PRESENT} |
      WITH COMPONENTS {..., fare-media-other-id PRESENT} )

fcFareMediaID-ID OBJECT IDENTIFIER ::=  { fc 14 }
fcFareMediaID  TCIP-CLASS ::=  {
  FcFareMediaID  IDENTIFIED BY  fcFareMediaID-ID
  WITH DESCRIPTION "  A unique string assigned to each fare instrument issued
by a financial authority (e.g., transit agency) which is recognized as payment
for transit services." }
FcFareMediaID  ::= SEQUENCE {
        text  FC-FareMediaID-txt      OPTIONAL,
        number  FC-FareMediaID-nbr
}
```



```
fcFareMediaOtherDefinition-ID OBJECT IDENTIFIER ::=  { fc 15 }
fcFareMediaOtherDefinition  TCIP-CLASS ::=  {
  FcFareMediaOtherDefinition  IDENTIFIED BY  fcFareMediaOtherDefinition-ID
  WITH DESCRIPTION "  A fare instrument which does not fall into monetary,
ride or pass categories.  (This may include an employee or retired
identification card.)" }
FcFareMediaOtherDefinition  ::= SEQUENCE {
     id  FC-FareMediaOtherID,
     description  FC-FareMediaOtherDescription,
     agency-id  CPT-AgencyID      OPTIONAL
}

fcFareMediaPair-ID OBJECT IDENTIFIER ::=  { fc 16 }
fcFareMediaPair  TCIP-CLASS ::=  {
  FcFareMediaPair  IDENTIFIED BY  fcFareMediaPair-ID
  WITH DESCRIPTION "  The start and end of a sequence of fare media."}
FcFareMediaPair  ::= SEQUENCE {
        first-number       FcFareMediaID,
        last-number        FcFareMediaID      OPTIONAL
}

fcFareTable-ID OBJECT IDENTIFIER ::=  { fc 17 }
fcFareTable  TCIP-CLASS ::=  {
  FcFareTable  IDENTIFIED BY  fcFareTable-ID
  WITH DESCRIPTION "  A list of the fares for services provided by public
transportation agencies."}
FcFareTable  ::= SEQUENCE {
      id  FC-FareTableID,
      time-period-table-id  FC-TimePeriodTableID,
      table-type-id
      CHOICE {  zone-table-id  FC-FareZoneTableID,
                  distance-table-id  FC-FareDistanceTableID }   OPTIONAL,
      mode  CPT-Mode        OPTIONAL,
      agency-id  CPT-AgencyID   OPTIONAL,
      activation-datetime     CPT-DateTime     OPTIONAL,
      deactivation-datetime   CPT-DateTime OPTIONAL,
      list-of-fare-character-cost SEQUENCE OF  FcFareCharacterCost,
       input-parameters OCTET STRING    OPTIONAL
   -- these are the base values of the table when an algorithm is specified
   -- in the FcFareCharacterCost record
}

fcFareTransaction-ID OBJECT IDENTIFIER ::=  { fc 18 }
fcFareTransaction  TCIP-CLASS ::=  {
  FcFareTransaction  IDENTIFIED BY  fcFareTransaction-ID
  WITH DESCRIPTION "  The transaction monetary values placed on fare media by
the fare transaction unit.  The initial value is retrieved from the media,
then one of three types of values is sent to the fare media for writing (i.e.,
FC-ValueReamaining), or processing (i.e., FC-ValueAdd or FC-ValueDeduct)."}
FcFareTransaction  ::= SEQUENCE {
    fare-media-id  FcFareMediaID,
    add  FC-ValueAdd,
    deduct  FC-ValueDeduct,
    remaining  FC-ValueRemaining,
    result  FC-TransactionResult                OPTIONAL,
    description  FC-TransactionDescription      OPTIONAL
}

fcFareZoneTable-ID OBJECT IDENTIFIER ::=  { fc 19 }
fcFareZoneTable  TCIP-CLASS ::=  {
```

```
  FcFareZoneTable  IDENTIFIED BY  fcFareZoneTable-ID
  WITH DESCRIPTION "  A table that pairs valid boarding and alighting zones."
}
FcFareZoneTable  ::= SEQUENCE {
      id  FC-FareZoneTableID,
     list-of-cell-indices   SEQUENCE OF  FC-FareZoneIndex,
      activation-datetime      CPT-DateTime   OPTIONAL,
      deactivation-datetime CPT-DateTime   OPTIONAL,
      agency-id  CPT-AgencyID              OPTIONAL
}

fcFareZoneTableEntry-ID OBJECT IDENTIFIER ::=  { fc 20 }
fcFareZoneTableEntry  TCIP-CLASS ::=  {
  FcFareZoneTableEntry  IDENTIFIED BY  fcFareZoneTableEntry-ID
  WITH DESCRIPTION "An entry into a zone-based boarding-alighting matrix.
Direction is implied by boarding and alighting pairs."}
FcFareZoneTableEntry  ::= SEQUENCE {
     index  FC-FareZoneIndex,
     boarding-zone-id  CPT-FareZoneID,
     alighting-zone-id  CPT-FareZoneID
}

fcFinancialTransaction-ID OBJECT IDENTIFIER ::=  { fc 21 }
fcFinancialTransaction  TCIP-CLASS ::=  {
  FcFinancialTransaction  IDENTIFIED BY  fcFinancialTransaction-ID
  WITH DESCRIPTION "  A report on a financial transaction related to  selling
or processing fare instruments"}
FcFinancialTransaction  ::= SEQUENCE {
      id   FC-FinancialTransactionID,
      type  FC-FinancialTransactionType,
      agency-id  CPT-AgencyID,
      --agency processing/recording financial transaction
      previous-use-parameters  FcUseParameters,
      --associated with transaction
      rider-classification  FC-RiderClassification  OPTIONAL,
      fare-media-id  FcFareMediaID             OPTIONAL,
      list-of-fare-instrument-ids SEQUENCE OF FC-FareInstrumentID OPTIONAL,
      list-of-fare-transactions SEQUENCE OF FcFareTransaction OPTIONAL,
      list-of-ride-transactions SEQUENCE OF FcRideTransaction OPTIONAL
}   (WITH COMPONENTS {..., list-of-fare-transactions PRESENT} |
       WITH COMPONENTS {..., list-of-ride-transactions PRESENT} )

fcFMStoredData-ID OBJECT IDENTIFIER ::=  { fc 22 }
fcFMStoredData  TCIP-CLASS ::=  {
  FcFMStoredData  IDENTIFIED BY  fcFMStoredData-ID
  WITH DESCRIPTION "  Data stored on electronic fare media (FM).  These data
elements describe the use (e.g., owner, routes, service) classes and value of
the media.  This includes parameters that support transfers for zone, distance
and time based fares."}
FcFMStoredData  ::= SEQUENCE {
    encryption-code  SEQUENCE OF FC-AgencyReserveCode   OPTIONAL,
    fare-media-id  FcFareMediaID,
    account-id  FC-AccountID    OPTIONAL,
    start-datetime      CPT-DateTime,
    sale-datetime       CPT-DateTime,
    agency-seller-id     CPT-AgencyID,
    expiration-datetime  FC-ExpirationDateTime,
    fare-instrument-id  FC-FareInstrumentID,
    rider-classification FC-RiderClassification,
    list-of-use-parameters  SEQUENCE OF FcUseParameters         OPTIONAL,
```



```
    sales-employee-id  CPT-EmployeeID  OPTIONAL,
      -- person who sold the fare media
    pos-id  FC-ComponentID  OPTIONAL, --refers to POS
    stop-point-at-pos  CPT-StopPointID   OPTIONAL,
            -- refers to POS station
    money-remaining FC-MonetaryValueRemaining    OPTIONAL,
    rides-remaining FC-RideValueRemaining        OPTIONAL,
    boarding-points-accepted   SEQUENCE OF CPT-StopPointID   OPTIONAL,
    fare-zones-accepted    SEQUENCE OF CPT-FareZoneID   OPTIONAL
}   (WITH COMPONENTS {..., money-remaining PRESENT} |
      WITH COMPONENTS {..., rides-remaining PRESENT} )


fcInitialPOSParameters-ID OBJECT IDENTIFIER ::=  { fc 23 }
fcInitialPOSParameters  TCIP-CLASS ::=  {
  FcInitialPOSParameters  IDENTIFIED BY  fcInitialPOSParameters-ID
  WITH DESCRIPTION "  The initial point of sale parameters needed for fare
media transactions."}
FcInitialPOSParameters  ::= SEQUENCE {
stop-point-id  CPT-StopPointID,
     agency-selling-FM   CPT-AgencyID,
     fare-media-id  FcFareMediaID,
     financial-transaction-id  FC-FinancialTransactionID,
     sale-datetime  CPT-DateTime,          -- date/time of sale
     employee-id  CPT-EmployeeID  OPTIONAL,
     vending-id   FC-ComponentID   OPTIONAL,
     fare-instrument-id  FC-FareInstrumentID  OPTIONAL,
     money-remaining  FC-MonetaryValueRemaining     OPTIONAL,
     rides-remaining  FC-RideValueRemaining   OPTIONAL,
     pass-value  FC-PassValue                 OPTIONAL
}  (  WITH COMPONENTS {..., employee-id, fare-instrument-id PRESENT}|
      WITH COMPONENTS {..., employee-id, money-remaining PRESENT} |
      WITH COMPONENTS {..., employee-id, rides-remaining PRESENT} |
      WITH COMPONENTS {..., vending-id, fare-instrument-id PRESENT}|
      WITH COMPONENTS {..., vending-id, money-remaining PRESENT} |
      WITH COMPONENTS {..., vending-id, rides-remaining PRESENT} )


fcMonetaryInstrumentDefinition-ID OBJECT IDENTIFIER ::=  { fc 24 }
fcMonetaryInstrumentDefinition  TCIP-CLASS ::=  {
  FcMonetaryInstrumentDefinition  IDENTIFIED BY
fcMonetaryInstrumentDefinition-ID
  WITH DESCRIPTION "  The definition of a type of instrument that possesses a
monetary value including cash (bills and coins), tokens, tickets, passes,
etc."}
FcMonetaryInstrumentDefinition  ::= SEQUENCE {
     id  FC-MonetaryInstrumentTypeID,
     type  FC-MonetaryInstrumentType,
     description  FC-MonetaryInstrumentDescription,
     authority  FC-MonetaryInstrumentAuthority,
     value  FC-MonetaryInstrumentValue
}

fcPassInstrumentDefinition-ID OBJECT IDENTIFIER ::=  { fc 25 }
fcPassInstrumentDefinition  TCIP-CLASS ::=  {
  FcPassInstrumentDefinition  IDENTIFIED BY fcPassInstrumentDefinition-ID
  WITH DESCRIPTION "  A fare instrument which contains unlimited number of
rides over a period of time, e.g., monthly, weekly and daily passes."}
FcPassInstrumentDefinition  ::= SEQUENCE {
     id  FC-PassInstrumentID,
```

```
     type  FC-PassInstrumentType,
     description  FC-PassInstrumentDescription   OPTIONAL,
     agency-id  CPT-AgencyID   OPTIONAL,  -- issuer of pass instrument
     value  FC-PassValue,
     expiration-datetime  FC-ExpirationDateTime   OPTIONAL,
     list-of-modes-accepted   SEQUENCE OF CPT-Mode   OPTIONAL,
     list-of-routes-accepted    SEQUENCE OF  SCH-RouteID   OPTIONAL,
     list-of-lines-accepted   SEQUENCE OF  SCH-BlockName   OPTIONAL
}

fcRideInstrumentDefinition-ID OBJECT IDENTIFIER ::=  { fc 26 }
fcRideInstrumentDefinition  TCIP-CLASS ::=  {
  FcRideInstrumentDefinition  IDENTIFIED BY fcRideInstrumentDefinition-ID
  WITH DESCRIPTION "  The definition of a fare instrument that possesses a
ride value for a trip on a public transportation vehicle serving a transit
agency or a region fare structure."}
FcRideInstrumentDefinition  ::= SEQUENCE{
    id  FC-RideInstrumentID,
    type  FC-RideInstrumentType,
    description  FC-RideInstrumentDescription,
    value  FC-RideValue,
    agency-id  CPT-AgencyID,
    list-of-modes-accepted   SEQUENCE OF CPT-Mode  OPTIONAL,
    list-of-routes-accepted   SEQUENCE OF SCH-RouteName      OPTIONAL,
    list-of-lines-accepted     SEQUENCE OF SCH-BlockName   OPTIONAL
}


fcRideTransaction-ID OBJECT IDENTIFIER ::=  { fc 27 }
fcRideTransaction  TCIP-CLASS ::=  {
  FcRideTransaction  IDENTIFIED BY  fcRideTransaction-ID
  WITH DESCRIPTION "  The transaction ride units placed on the fare media by
the fare transaction unit.  The initial value is retrieved from the fare
media, then one of the three types of ride units is sent to the fare media for
writing (i.e., remaining value is put into   FC-RideValueRemaining) or
processing (i.e., FC-RideValueAdd or FC-RideValueDeduct)." }
FcRideTransaction  ::= SEQUENCE {
      fare-media-id  FcFareMediaID,
      add  FC-RideValueAdd,
      deduct  FC-RideValueDeduct,
      remaining  FC-RideValueRemaining,
      result  FC-TransactionResult             OPTIONAL,
      description  FC-TransactionDescription   OPTIONAL
}

fcTimePeriodEntry-ID OBJECT IDENTIFIER ::=  { fc 28 }
fcTimePeriodEntry  TCIP-CLASS ::=  {
  FcTimePeriodEntry  IDENTIFIED BY  fcTimePeriodEntry-ID
  WITH DESCRIPTION "  The beginning and ending of a period of time in a
transit service day type (e.g., day   of the week) or calendar date.  This
entry is used to complete a FcTimePeriodTable." }
FcTimePeriodEntry  ::= SEQUENCE {
    index  FC-TimePeriodIndex,
    begin-time   TIME,
    end-time      TIME,
    day       CHOICE {  calendar-date  CPT-CalendarDate,
                  day-type  SCH-DayType }
}

fcTimePeriodTable-ID OBJECT IDENTIFIER ::=  { fc 29 }
```



```
fcTimePeriodTable  TCIP-CLASS ::=  {
  FcTimePeriodTable  IDENTIFIED BY  fcTimePeriodTable-ID
  WITH DESCRIPTION "  A table that segments a day, day type, week or year into
separate time periods." }
FcTimePeriodTable::= SEQUENCE {
    id  FC-TimePeriodTableID,
    list-of-time-period-indices  SEQUENCE OF FC-TimePeriodIndex,
    agency-id  CPT-AgencyID                  OPTIONAL,
    activation-date CPT-ActivationDate         OPTIONAL,
    deaactivation-date CPT-DeactivationDate   OPTIONAL
}


fcUseParameters-ID OBJECT IDENTIFIER ::=  { fc 30 }
fcUseParameters  TCIP-CLASS ::=  {
  FcUseParameters  IDENTIFIED BY  fcUseParameters-ID
  WITH DESCRIPTION "  Information collected on each use of a fare media." }
FcUseParameters  ::= SEQUENCE {
     financial-transaction-id  FC-FinancialTransactionID,
     agency-id  CPT-AgencyID,             -- agency providing service
     boarding-point-id      CPT-StopPointIDLong  OPTIONAL,
     boarding-zone-id      CPT-FareZoneID OPTIONAL,
     boarding-datetime   CPT-DateTime,
     value-add  FC-ValueAdd   OPTIONAL,
     value-deduct  FC-ValueDeduct  OPTIONAL,
     ride-value-add  FC-RideValueAdd  OPTIONAL,
     ride-value-deduct  FC-RideValueDeduct  OPTIONAL,
     route-id  SCH-RouteID    OPTIONAL,
     route-direction-name  SCH-RouteDirectionName      OPTIONAL,
     riders  FC-NumberOfRiders     OPTIONAL,
     position  FC-PrinterPosition   OPTIONAL,
     mode    CPT-Mode              OPTIONAL,
     service-type  SCH-ServiceType OPTIONAL,
     trip-type  SCH-TripType       OPTIONAL,
     alighting-datetime   CPT-DateTime OPTIONAL,
     alighting-point-id       CPT-StopPointIDLong  OPTIONAL,
     alighting-zone-id       CPT-FareZoneID    OPTIONAL
} ( WITH COMPONENTS {..., boarding-point-id, value-add PRESENT} |
   WITH COMPONENTS {..., boarding-point-id, value-deduct PRESENT} |
   WITH COMPONENTS {..., boarding-point-id, ride-value-add PRESENT} |
   WITH COMPONENTS {..., boarding-point-id, ride-value-deduct PRESENT}|
   WITH COMPONENTS {..., boarding-zone-id, value-add PRESENT} |
   WITH COMPONENTS {..., boarding-zone-id, value-deduct PRESENT} |
   WITH COMPONENTS {..., boarding-zone-id, ride-value-add PRESENT} |
   WITH COMPONENTS {..., boarding-zone-id, ride-value-deduct PRESENT} )


fcValueCounter-ID OBJECT IDENTIFIER ::=  { fc 31 }
fcValueCounter  TCIP-CLASS ::=  {
  FcValueCounter  IDENTIFIED BY  fcValueCounter-ID
  WITH DESCRIPTION "    The number of complete transactions on a specified
subassembly of a component or device." }
FcValueCounter  ::= SEQUENCE {
     id  FC-CountTypeID,
     count  FC-ValueCount,
     start-datetime   CPT-DateTime       OPTIONAL,
     end-datetime    CPT-DateTime       OPTIONAL
}

END  --TCIP-FCDD
```