

# Message Formats for the Interoperability Standard

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- Status Quo
- What is ISO 8583?
- Features supported by Interoperability Standard Document
- ISO 8583 Format
- Sample Message Format

- Payments happen across multiple systems and networks
- Banks in India follow SFMS and ISO 8583
- SFMS (Structured Financial Messaging Solution )
  - follows SWIFT and ISO 7775
- **ISO8583:2003** is the latest messaging standard

# What is ISO 8583?

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- ISO 8583 is a standard for systems that exchange electronic transactions made by cardholders using payment cards
- ISO 8583 messages
  - Can be used for both financial and non-financial messages
  - Allows variations by different groups of users
- Versions of the ISO 8583
  - **ISO8583:1987**
  - **ISO8583:1993**
  - **ISO8583:2003**

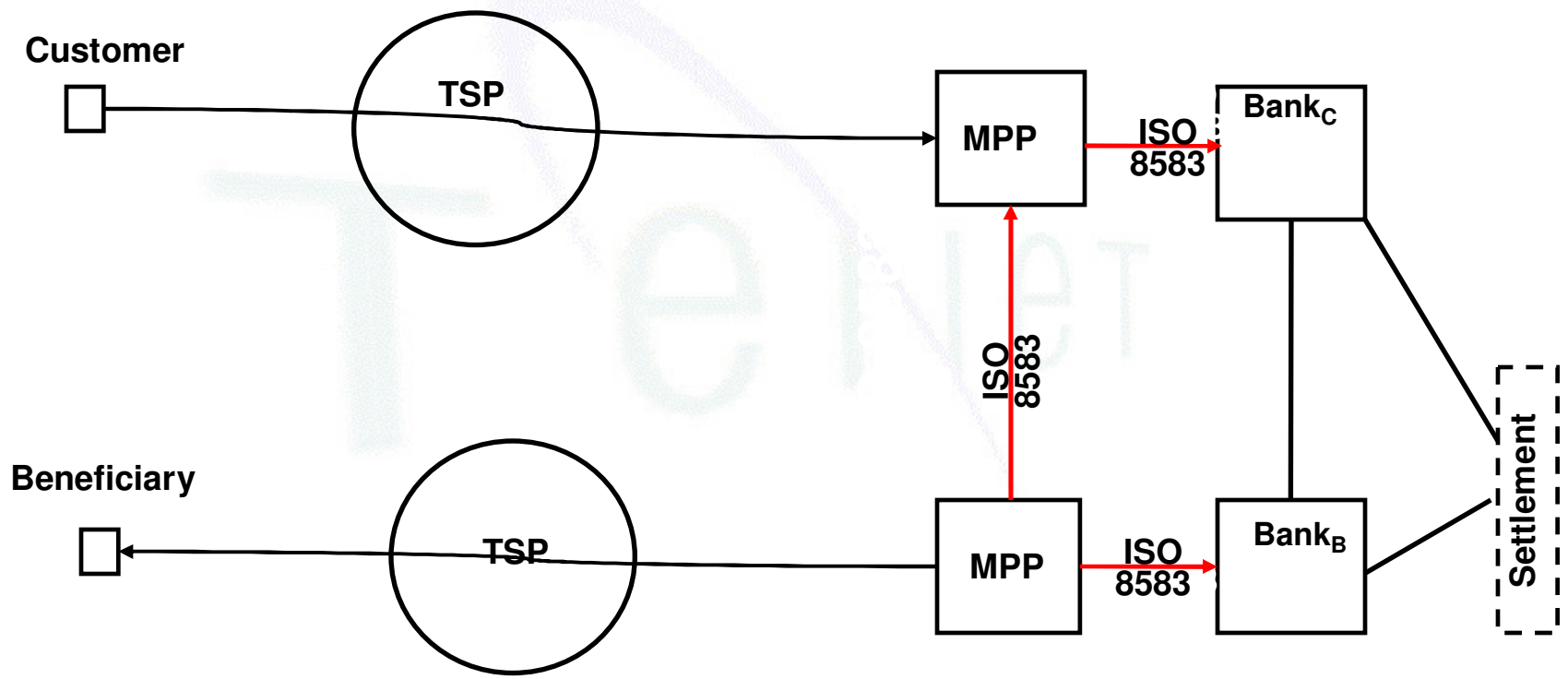
# Features in Interoperability Standards

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- The interoperability standards document supports version ISO 8583-1:2003
- Message formats standardised between
  - MPP to MPP
  - MPP to Bank

# Message Flow



- Payment Types
  - Bank Accounts
  - Prepaid cards
- Transaction Types
  - Merchant payments (sales)
  - People to People money transfers
  - Balance enquiries

# Structure of an ISO 8583 message

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ISO messages have three parts



- **Message Type Indicator (MTI)**
  - 4 digit code
- **BitMaps**
  - Indicates which data elements are present
- **Data Elements**
  - the fields of the message

# Message Type Indicator

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- MTI is represented by “ABCD”
  - A-Version Number  
Example: 0- 1987 Version, 2-2003 Version
  - B-Message Class  
Example: 2-Financial presentment, 4-Reversal
  - C-Message Function  
Example: 1-Request Response, 0-Request
  - D-Transaction Originator  
Example: 0-Acquirer
- For example in the standard we use **MTI 2200** as transfer Request

- These fields carry the transaction information
- Each message class has a defined set of data elements
- Data elements in a message class can be
  - Mandatory/ Optional/ Conditional
- A message may / may not have all data elements of its Message Class

- Data Fields
  - **Fixed Length**
    - Numeric, Alpha Numeric and binary
  - **Variable Length**
    - Max Length 99- Numeric, Alpha Numeric and binary
    - Max Length 999- Numeric, Alpha Numeric and binary

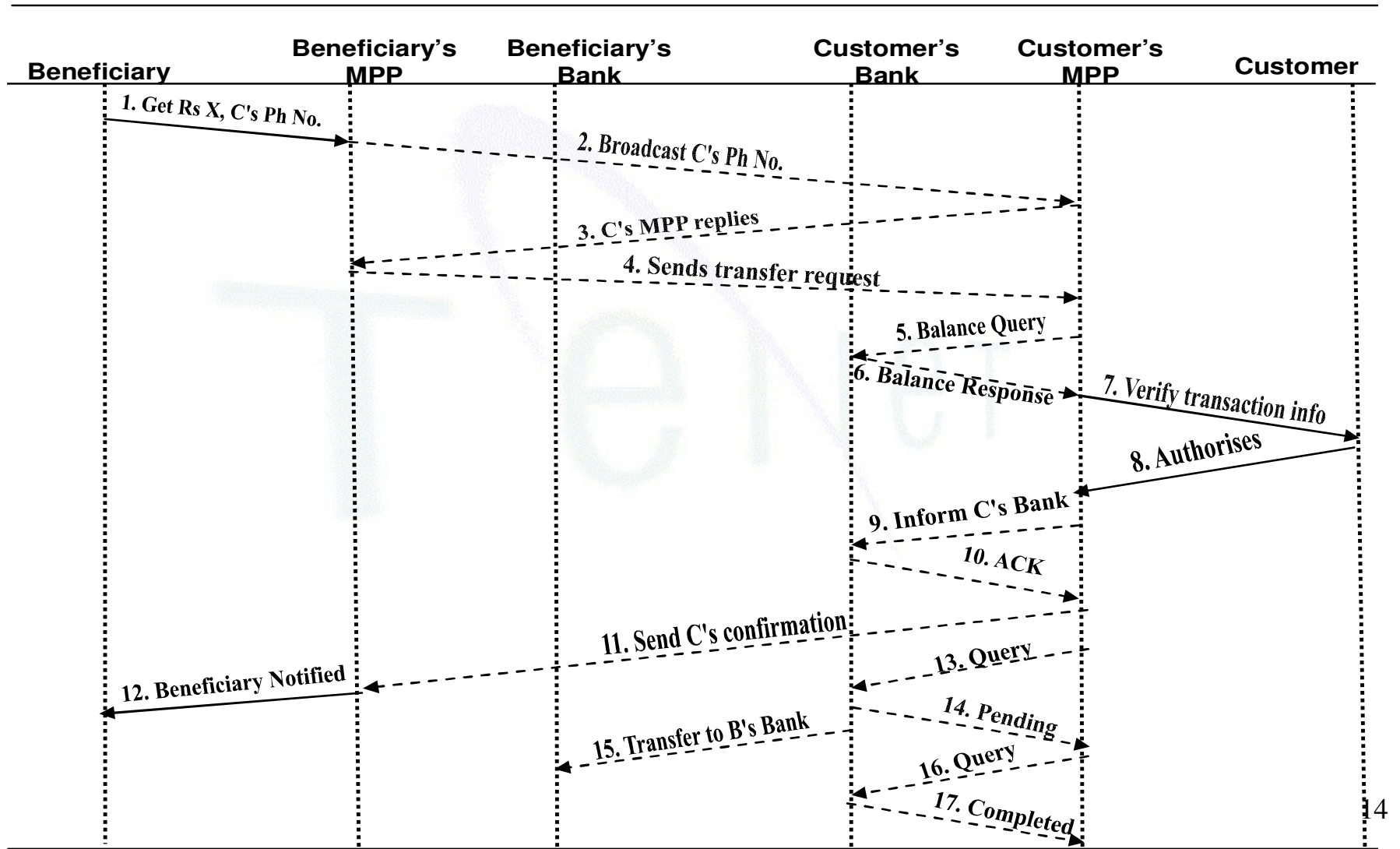
ISO 8583 is not specific about how a given field is represented. Numeric field can be represented as ASCII ,EBCDIC,BCD ...

- An ISO message has a Primary Bit Map
- It may have a Secondary Bit Map
- The bitmap may be transmitted as 8 bytes of binary data, or as 16 hexadecimal characters in the ASCII or EBCDIC character sets

# Primary Bit Map

byte	hex value	bit value	field #
0	20	0010 0000	3
1	20	0010 0000	11
2	00	0000 0000	

byte	hex value	bit value	field #
0	A0	1010 0000	secondary bitmap present plus #3
1	20	0010 0000	11
2	00	0000 0000	





# MPP-MPP

MPFI Field	ISO 8583 Field	Bit #	M/O	Msg 2	Msg 4
B's MPP Id	Acquiring institution identification code	32	M	Y	Y
C's MPP Id	PAN	2		Y	Y
Amount	Amount Transaction	4	M		Y
B's Name	Card acceptor name/location	43	M		Y
C's Number	Target Number	123		Y	Y
B's Number	Card acceptor name/location	43	M	Y	Y
C's a/c Number	Account identification 1	102			Y
B's a/c Number	Account identification 2	103			Y
C's Bank Id	Receiving institution identification code	100			Y
B's Bank Id	Forwarding institution identification code	33			Y
C's Name	Customer's name	124			
Transaction Id	Systems Trace Audit Number	11	M	Y	Y
Tx Date & Tx Time	Date and time local transaction	12	M	Y	Y
Control Field	Bit Map	1		Y	Y
A series of codes intended to identify how a transaction completed at the POS.	Point of service data code	22	M	R	R
Code indicating the specific purpose of the message within its message class.	Function code	24	M	R	R
Code classifying the type of business being done by the card acceptor for this transaction (in accordance with ISO 18245).	Merchant category code	26	M	R	R
Code used to describe the effect of a transaction on the Customer account and the accounts affected.	Processing Code	3	M	R	R

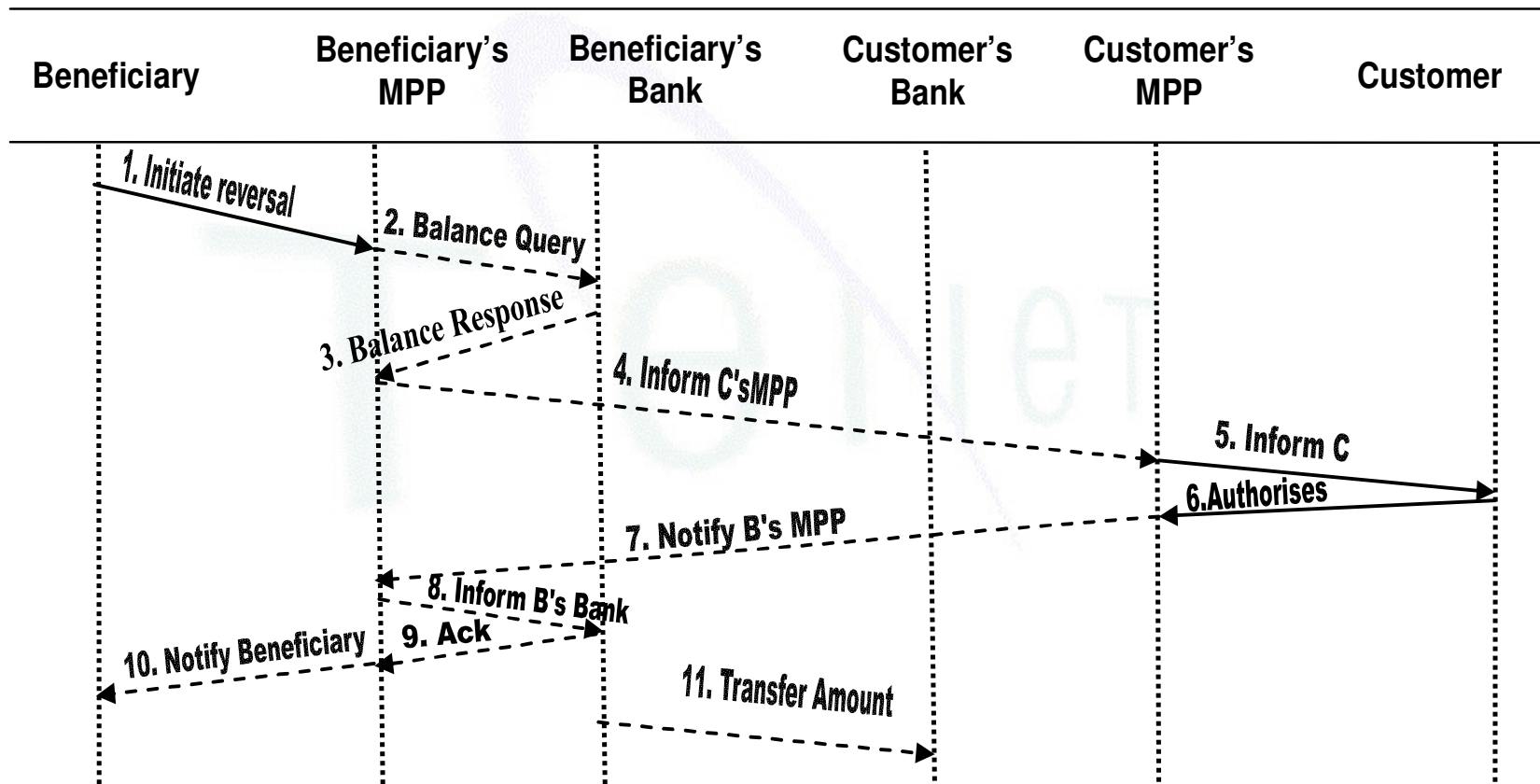


# MPP- Bank

MPPFI Field	ISO 8583 Field	Bit #	M/O	Msg 6(pull)/ 3(push)	Msg 10(pull)/ 13(push)	Msg 14,17(pull)/ 15,18(push)
B's MPP Id C's MPP Id	Acquiring institution identification code PAN	32 2		Y	Y	Y
Amount	Amount Transaction	4	M	Y	R	R
B's Name	Card acceptor name/location	43				
C's Mobile Number	Target Mobile Number	123				
B's Mobile Number	Card acceptor name/location	43				
C's a/c Number B's a/c Number	Account identification 1 Account identification 2	102 103		Y		Y
C's Bank Id	Receiving institution identification code	100		Y	Y	Y
B's Bank Id	Forwarding institution identification code	33				
C's Name	Customer's name	124				
Transaction Id	Systems Trace Audit Number	11		Y	Y	Y
Tx Date & Tx Time	Date and time local transaction	12	M	Y	Y	Y
	Bit Map	1		Y	Y	Y
Response Code	Action code	39	M	Y	Y	Y



# Beneficiary Initiated Reversal





# MPP-MPP

MPFI Field	ISO 8583 Field	Bit #	M/O	Msg 7
B's MPP Id	Acquiring institution identification code	32		Y
C's MPP Id	PAN	2		Y
Amount	Amount Transaction	4	M	R
B's Name	Card acceptor name/location	43		
C's Number	Target Number	123		
B's Number	Card acceptor name/location	43		
C's a/c Number	Account identification 1	102		
B's a/c Number	Account identification 2	103		
C's Bank Id	Receiving institution identification code	100		
B's Bank Id	Forwarding institution identification code	33		
C's Name	Customer's name	124		
Transaction Id	Systems Trace Audit Number	11		Y
Tx Date & Tx Time	Date and time local transaction	12	M	Y
	Bit Map	1		Y
Response Code	Action code	39	M	Y

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Thank You