APPLICATION SERVER
GATEWAY

SWITCHING - GATEWAY
PREPAID MODULE
Connection and Reconciliation
Technical Specification

Version 1.0.1 (January 2009)

PT. PLN (PERSERO) DISTRIBUSI JAWA BARAT DAN BANTEN

2008

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REVISIONS

VERSION	DATE	DESCRIPTION
1.0.1	January 15th, 2009	Fix flow description in page 7, 11, 13, 15, 17, 18, 20 Fix message stream examples in page 51 Fix reconciliation specification (including control and log) and examples in page 52 - 65

SECTION 1
CONNECTION

Background

PLN-DJBB (Perusahaan Listrik Negara – Distribusi Jawa Barat dan Banten) is government company supplies electricity in Jawa Barat and Banten. As one of public company, one of major purpose is how to increase customer satisfaction by improving its customer service level including new prepaid system for electricity subscription. Currently, there is more than one switching companies accessing PLN-DJBB database directly using different approach. Along with internal requirements comes from internal PLN-DJBB and based on existing operation problems with switching companies, also other service requirements from PLN-DJBB such as Post-paid and Pre-paid program, PLN-DJBB proposed a single and centralized data access through a unified gateway using financial standard messaging protocol, ISO8583:2003 (http://www.iso.org).

The simple idea is all registered switching need to access PLN-DJBB database or legacy system must enter through single unified and standard gateway using standard message and standard mechanism. Further, direct access to database is highly prohibited.

Global Process Flow

Global process flow of prepaid token purchase can be illustrated as following:

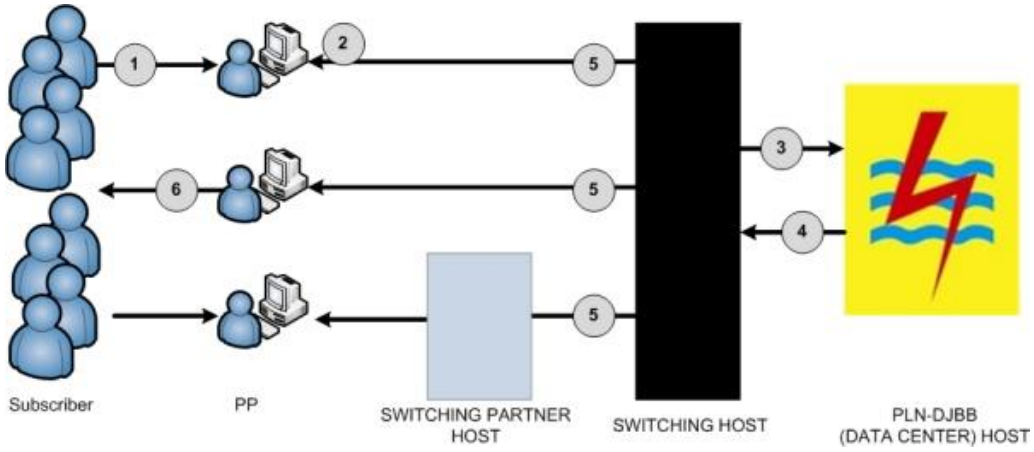

Figure 1. Global Process Flow

1. Customer come to SWITCHING/SWITCHING PARTNER PP to buy power token (contains kWH unit)
2. After type-in METER NUMBER, SWITCHING PP will send the request to SWITCHING HOST
3. SWITCHING HOST will create a standard message using PLN-DJBB Standard Message and sent it to PLN-DJBB GATEWAY HOST (later is known as GATEWAY only)
4. PLN-DJBB HOST will do a checking with its internal system and GATEWAY will response with appropriate information to SWITCHING HOST
5. SWITCHING HOST will re-package the message and response to SWITCHING PP
6. SWITCHING PP will receive the information and print the receipt if the purchase request process was successful

SECTION 2
CONNECTION ARCHITECTURE

Connection Architecture

Please notify carefully the following illustration described how every involved system are interact each others.

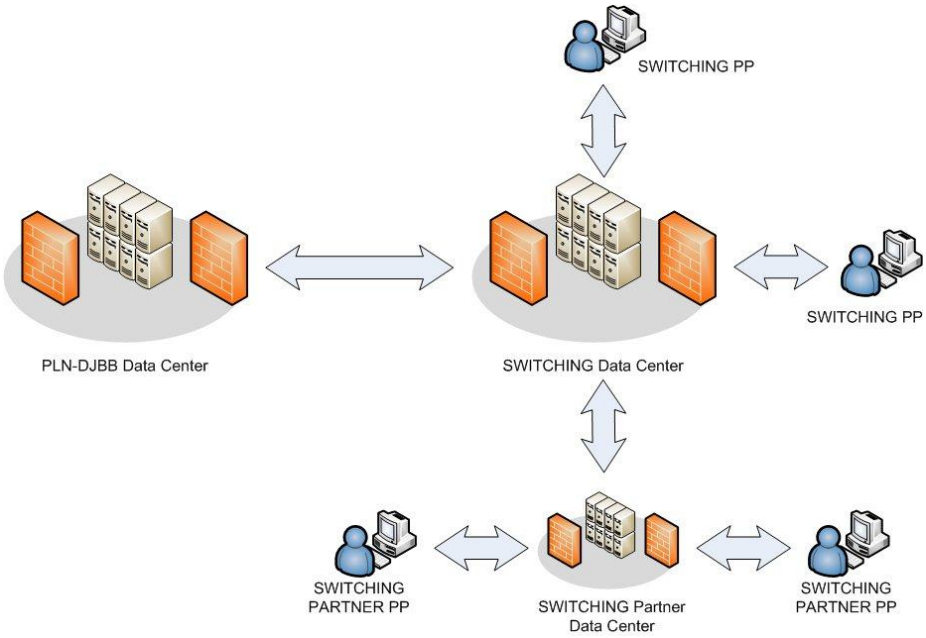

Figure 2. Connection Architecture

SWITCHING System can access PLN-DJBB System using dedicated communication channel, fiber channel for instance for link reliability and availability reasons. Any other connection other than mentioned, must be discussed first with PLN-DJBB.

Messaging System

TCP/IP Communication System will bring the information from SWITCHING System and PLN-DJBB-Application Server Gateway and vice-versa.

The standard communication protocol that used by PLN-DJBB Application Server is TCP/IP ("telnet" like), where client must send a negative byte value -1 (hexa -0x1 in JAVA/C or ASCII(255) instead of bytes of CRLF characters for real telnet application) to indicate END OF MESSAGE (EOM). Every request message will be responded by an appropriate reply according to each request type.

SECTION 3
MESSAGING PROTOCOL SPECIFICATION

Standard Messaging Protocol

PLN-DJBB message is ISO8583:2003 based message, a well-known and wide-used financial messaging protocol to be exchanged between SWITCHING SYSTEM and PLN-DJBB SYSTEM.

There are four basic message types as following:

- INQUIRY
  INQUIRY is a transaction to get security token (PLN Reference Number).
  Please notify that this process must be followed by purchase request as soon as inquiry response was received. There is no information should be displayed.
  INPUT : METER NUMBER, PURCHASE AMOUNT
  OUTPUT : PLN-DJBB REFERENCE NUMBER
- PURCHASE
  PURCHASE is a transaction to buy power token (to be entered to prepaid meter) contains kWH unit.
  INPUT : METER NUMBER, PURCHASE AMOUNT, PLN-DJBB REFERENCE NUMBER, SWITCHING RECEIPT REFERENCE NUMBER
  OUTPUT : Success (and purchase description items) or Fail
- PURCHASE ADVICE (REPEAT)
  PURCHASE ADVICE is a transaction to retrieve status of purchase request. This transaction can be used if client did not receive purchase response in manner time.
  INPUT : METER NUMBER, PURCHASE AMOUNT, PLN-DJBB REFERENCE NUMBER, SWITCHING RECEIPT REFERENCE NUMBER
  OUTPUT : Success (and purchase description items) or Fail
- NETWORK MANAGEMENT
  NETWORK MANAGEMENT is transaction related to connection networking functions such as sign-on, sign-off, and echo.

Each message must be trailed by a negative byte value -1 (hexa -0x1 in JAVA/C or ASCII(255)) indicates end of message (EOM). The SWITCHING must be blocked, wait for a response from PLN-DJBB Gateway (synchronous). If a connection time-out was occurred (20-40 seconds were lapsed), SWITCHING can assume the network link was broken and response with TIMEOUT was occurred (for purchase transaction see Failed Flow).

Message Sequence and Flow

Message sequence and flow can be illustrated as following:

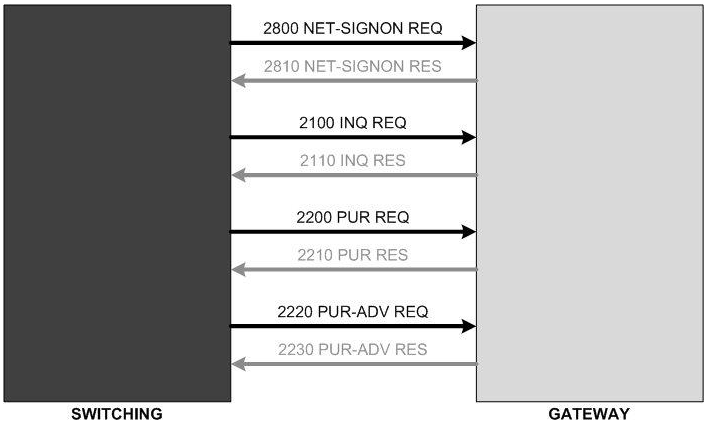

Figure 3. Global Message Flow

Before doing any transaction activities, SWITCHING must sign-on first by sending a message with type 2800 – Network Management Request and action 101 – Sign-On to GATEWAY with a predefined identification code (SWITCHING ID) provided by PLN-DJBB. If the SWITCHING signed-on successfully (described in response message sent by GATEWAY with type 2810 – Network Management Response), SWITCHING can do any transactions as long as available network connection to GATEWAY.

Purchase activity contains two consecutive actions as following:

- Before purchase, SWITCHING must send message type 2100 – Inquiry Request to PLN-DJBB GATEWAY System to get a security token (PLN-DJBB REFERENCE NUMBER). The key information must be send in this message is METER NUMBER (the prepaid meter number). GATEWAY will response with message type 2110 – Inquiry Response, contains security token.
- If SWITCHING receives successful inquiry response, SWITCHING must send a message with type 2200 – Purchase Request to GATEWAY. GATEWAY will contact vending machine to get prepaid token contains kWH unit and 20 digits of token to be entered to prepaid meter. GATEWAY will response with message type 2210 – Purchase Response with appropriate response code and purchase description items if success. The key information in this message is the purchase status, success or fail.

  If technical problem was occurred, broken network link for instance, there is possibility that SWITCHING does not get the purchase response sent by GATEWAY. In this case, SWITCHING must sent message with type 2220 – Purchase Advice Request to GATEWAY. By referencing this message, GATEWAY will try to retrieve the requested purchase status with several conditions verifications. If all conditions are met, GATEWAY will return necessary information message with type 2230 – Purchase Advice Response. If SWITCHING still does not get the purchase advice response from GATEWAY, SWITCHING must sent message with type 2221 – Purchase Advice Repeat Request. If SWITCHING still does not receive a purchase advice repeat response message from GATEWAY, SWITCHING must send the second purchase advice repeat request and wait for GATEWAY response message (message type 2231 – Purchase Advice Repeat Response). These

procedures must be taken and reported as log along with reconciliation process as reference data to determine if a suspect transaction is accepted or not by PLN-DJBB.

SWITCHING also can check the GATEWAY service availability by sending message with type 2800 – Network Management Request and action 301 – Echo Test.

Detail message/protocol specification can be read at Attachment A.

SECTION 4
MESSAGE FLOW

While sending/receiving message, SWITCHING may get one of two following situations:

- Normal
- FAIL to get purchase response message
- Late Response
- Purchase Advice Repeat

SWITCHING must be aware of critical transaction such as purchase when the situation is not NORMAL. SWITCHING must send purchase advice request if it was occurred and send maximum 2 purchase advice repeat request if SWITCHING does not get purchase advice response in a period of time. PLN-DJBB was recommended that the grace period for sending and receiving messages are 20 – 40 seconds. Grace period here means how long SWITCHING or GATEWAY must be wait the message before disconnecting the connection and assumes that other party or network is broken.

Normal Flow

Normal flow is a successful transaction (see Figure 4).

Following steps are normal flow:

1. SWITCHING sends message type 2100
2. GATEWAY responses with message type 2110
3. SWITCHING will send message type 2200 to GATEWAY. This time, the message means to purchase power unit (token).
4. GATEWAY will send message type 2210 contains purchase request status

LEGEND:

INQ : Inquiry (get security token)
PUR : Purchase
REQ : Request
RES : Response

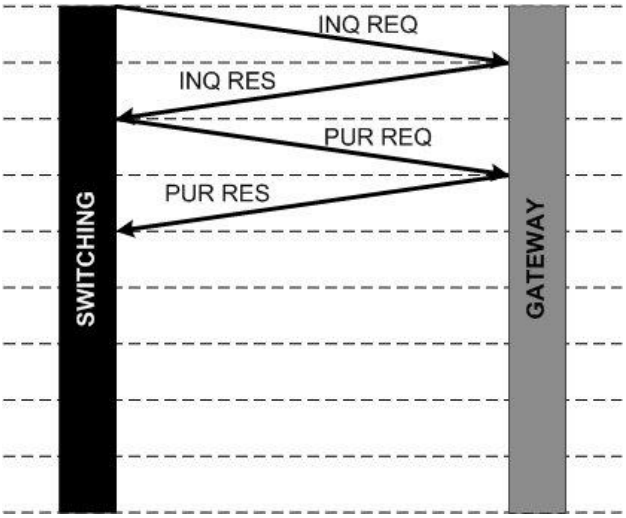

Figure 4. Normal Flow

Failed Flow

Failed transaction occurs when purchase response message does not arrive in a period of time or SWITCHING send improper message stream (see Figure 5). Message does not arrive usually caused by failure of network or long-time processing in GATEWAY. In this condition SWITCHING can assume connection time-out was occurred. When the SWITCHING sends improper message, GATEWAY will send the exact message as sent by SWITCHING without further processing.

Following steps are example of failed flow for message does not arrive in period of time:

1. Same as step number 1-3 on Normal Flow
2. Same as step 4 on Normal Flow, but fail to reach SWITCHING
3. SWITCHING will wait for a period of time, then send message type 2220 – Purchase Advice Request
4. GATEWAY sends the purchase advice response, message type 2230 – Purchase Advice Response

LEGEND:

INQ : Inquiry (get security token)
PUR : Purchase
ADV : Purchase Advice
ADR : Purchase Advice-Repeat
REQ : Request
RES : Response

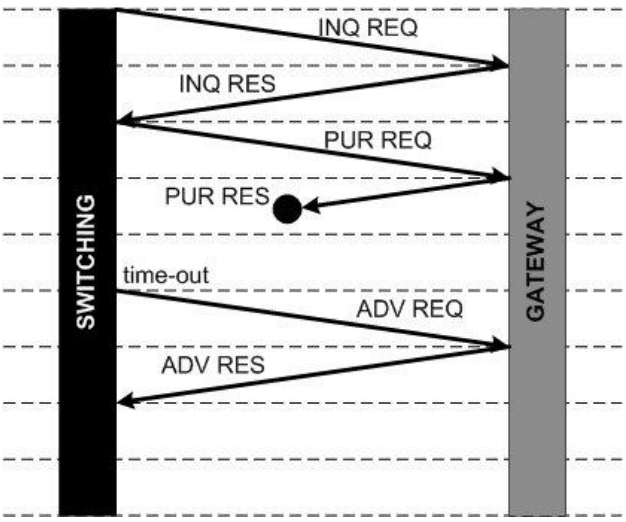

Figure 5. Failed Flow

Time-out (Late Response) Flow

Sometimes purchase message response is arrived after specific of time (time-out).

Following steps are example of failed flow for message does not arrive in period of time:

1. Same as step number 1-3 on Normal Flow
2. Same as step 4 on Normal Flow, but GATEWAY was late to send the response
3. SWITCHING will wait for a period of time, then send message type 2220 – Purchase Advice Request
4. GATEWAY sends the purchase advice response, message type 2230 – Purchase Advice Response
5. SWITCHING receive message type 2210 after grace period (time-out). SWITCHING must consider that it is a failed transaction.

LEGEND:

INQ : Inquiry (get security token)
PUR : Purchase
ADV : Purchase Advice
ADR : Purchase Advice-Repeat
REQ : Request
RES : Response

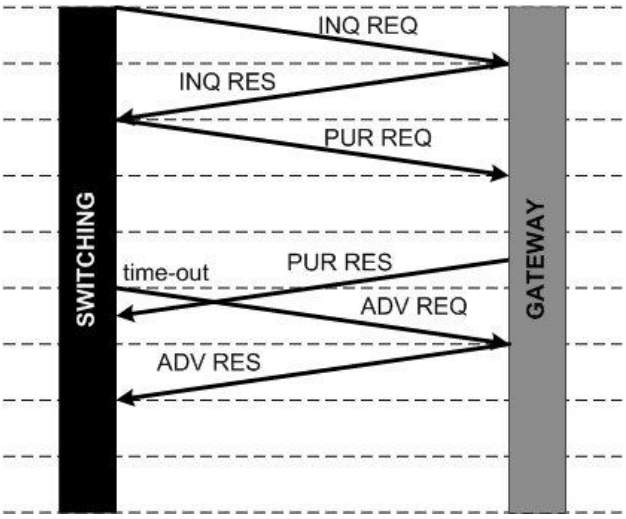

Figure 6. Time-out Flow

Purchase Advice Repeat Flow

Purchase Advice Repeat flow usually occurs if first purchase advice request was failed/time-out.

Following steps are example of failed flow for message does not arrive in period of time:

1. Same as step number 1-3 on Normal Flow
2. Same as step 4 on Normal Flow, but GATEWAY was late to send the response
3. SWITCHING will wait for a period of time, then send message type 2220 – Purchase Advice Request
4. But GATEWAY does not send the purchase advice response. SWITCHING must send message type 2221 – Purchase Advice Repeat Request.
5. If success, GATEWAY will send purchase advice repeat response with message type 2231 – Purchase Advice Repeat Response

LEGEND:

INQ : Inquiry (get security token)
PUR : Purchase
ADV : Purchase Advice
ADR : Purchase Advice - Repeat
REQ : Request
RES : Response

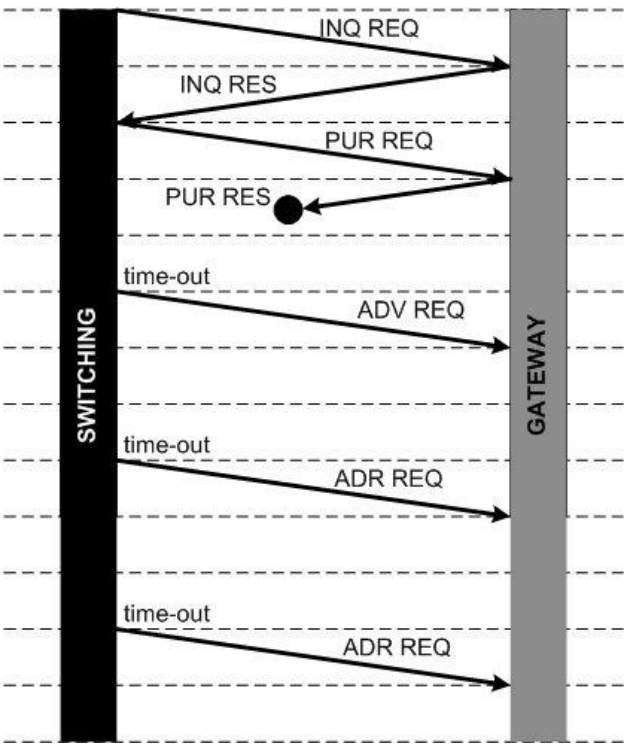

Figure 7. Purchase Advice Repeat Flow

SECTION 5
RECONCILIATION

What is Reconciliation?

Reconciliation is the process of matching all transaction report between GATEWAY and SWITCHING. Result of reconciliation report is equal transaction data between both parties.

Every working day, Collecting Agent (CA) is responsible for consolidating and matching all the transaction files. These files come from GATEWAY and SWITCHING. Reconciliation is based on settlement date which is stated in payment response from GATEWAY. Settlement date determine which transaction must be reported in certain date. The settlement time is defined by PLN-DJBB. Currently is set to 23:59:59. With this setting, all transactions occur between 00:00:00 – 23:59:59 in the same day, must be reported as one day transaction.

GATEWAY is always available for prepaid token purchase except the GATEWAY send information *cut-off* in its response message.

Based on reconciliation result, CA will transfer transaction fund to PLN-DJBB account in the next day (transaction day + 1).

All parties must develop reconciliation application to support reconciliation process based on each party responsibility.

Reconciliation Process Flow and Timing

Reconciliation process can be illustrated as following:

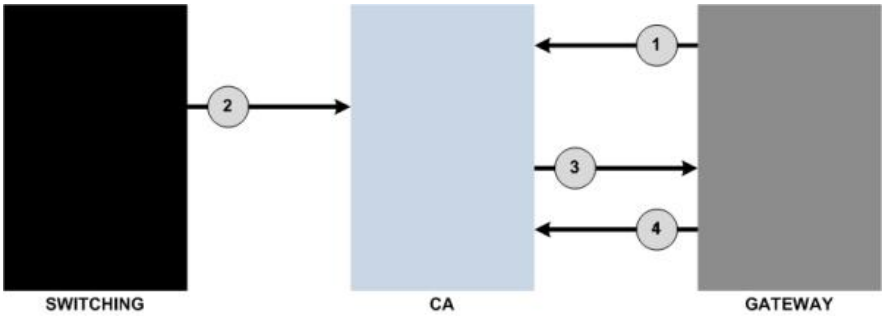

Figure 8. Reconciliation Process Flow

NO	TIME	ACTIVITY	ACTOR
1	(D+1) 00:00 – 08:00	Transaction Data Generation AAAAAAA-53502-CCYYMMDD.txt AAAAAAA-53502-CCYYMMDD.txt.ctl These files are stored in PLN-DJBB FTP Server (10.2.12.253:21, user/pwd is defined by PLN-DJBB), path: pre/transaction. After SWITCHING download .txt, move these files to path pre/transaction/process. CAUTION: DO NOT download file .txt if is no .txt.ctl	PLN-DJBB
2	(D+1) 00:00 – 08:00	Transaction Data Generation AAAAAAA-53502-CCYYMMDD.ftr AAAAAAA-53502-CCYYMMDD.ftr.ctl These files are stored in SWITCHING FTP Server (server and user/pwd are defined by SWITCHING).	SWITCHING
3	(D+1) 08:00 – 10:00	Reconciliation process between CA and SWITCHING by comparing .txt (downloaded by SWITCHING for CA) and .ftr, with suspect transaction in AAAAAAA-53502-CCYYMMDD.rcn as the result may contains *cancel* or *force* payment transaction. Store location is defined by SWITCHING. These files must be uploaded to PLN-DJBB FTP Server in path: pre/suspect. If the .rcn contains suspect transactions, SWITCHING must provide file AAAAAAA-53502-CCYYMMDD.log contains log information (specification can be read at Attachment D)	CA, SWITCHING
4	(D+1) 10:00 – 12:00	PLN-DJBB processes .rcn with final suspect transaction in AAAAAAA-53502-CCYYMMDD.fcn as the result contains approved or not of *cancel* or *force* transaction. PLN-DJBB will store this file in PLN-DJBB FTP Server, path: pre/final. SWITCHING can download this file if there is AAAAAAA-53502-CCYYMMDD.fcn.ctl file.	PLN-DJBB, SWITCHING
5	(D+1) 12:00 – 13:00	Final Report Generation of transaction fund must be transferred into PLN-DJBB account	SWITCHING

6	(D+1) 13:00 – 15:00	Time to Transfer of transaction fund to PLN-DJBB account based on Final Report	CA

LEGEND:

D : Transaction Day
D+1 : Transaction Day + 1
AAAAAAA : 7 digits of Switching Identification Code
CCYYMMDD : Transaction day, e.g. 20080401 means April 1st, 2008

All generated files in reconciliation process (.txt, .ftr, .rcn, .fcn) are:

- One row, one transaction.
- Text file with pipe (|) delimiter separated values.

HINT: You can open or import this file with Excel using CSV format and define the pipe (|) character as value delimiter.

- Always have header (first row) and checksum row (last row). Reconciliation file without transaction minimal contains 2 rows: header row and checksum row.

Detail reconciliation file specification can be read at Attachment B.

All control files for each reconciliation files (.txt.ctl, .ftr.ctl, .rcn.ctl, .fcn.ctl) are:

- Text file with pipe (|) delimiter separated values.
- Only have one row contains total number transaction and total amount of transaction.

Detail reconciliation control file specification can be read at Attachment C.

Days of Reconciliation File Generation

Reconciliation can be done in working day only (Monday – Friday). According to this condition, there are three reconciliation types:

1. Type-1 Reconciliation, transaction was settled on Monday-Thursday will be reconciled on day D+1. Reconciliation file contains transaction with that settlement day only.
2. Type-2 Reconciliation, transaction was settled on Friday up to Sunday will be reconciled on consecutive Monday or next first working day. Reconciliation file contains transactions settled on Friday, Saturday up to Sunday.
3. Type-3 Reconciliation, transaction was occurred in non working days or holidays will be reconciled on next first working day. Reconciliation file contains previous day of first holiday and holiday transactions.

PLEASE READ THE FOLLOWING TERMS CAREFULLY:

1. Reconciliation is based on settlement date NOT transaction date.
2. Date in reconciliation filename is reconciliation date (when reconciliation was taken)
3. Filename pattern is: AAAAAAA-53502-CCYYMMDD, AAAAAAA = Switching Identification Code (defined by PLN-DJBB), 53502 = PAN for Prepaid, CCYY = Year with century (4 digits), MM = month (2 digits, zero left-padding), DD = date (2 digits, zero left-padding)
4. Reconciliation file is always generated and reconciliation is always taken even there is no transactions ("empty recon file" contains header and checksum rows only)

Example of Type-1 Reconciliation:

- Transaction with settlement date is Monday, April 7th, 2008
- Reconciliation date is Tuesday, April 8th, 2008 and reconciliation process will be taken on Tuesday, April 8th, 2008
- Reconciliation Files:
    - PLN-DJBB Transaction Report (AAAAAAA-53502-20080408.txt)
    - SWITCHING Transaction Report (AAAAAAA-53502-20080408.ftr)
    - CA Reconciliation (Suspect) Report (AAAAAAA-53502-20080408.rcn)
    - PLN-DJBB Final Reconciliation (Suspect) Result Report (AAAAAAA-53502-20080408.fcn)

Example of Type-2 Reconciliation:

- Transaction with settlement date is Friday, April 11th, 2008
- Reconciliation date is Monday, April 14th, 2008 and reconciliation process will be taken on Monday, April 14th, 2008
- Reconciliation Files:
    - PLN-DJBB Transaction Report (AAAAAAA-53502-20080414.txt)
    - SWITCHING Transaction Report (AAAAAAA-53502-20080407.ftr)
    - CA Reconciliation (Suspect) Report (AAAAAAA-53502-20080414.rcn)
    - PLN-DJBB Final Reconciliation (Suspect) Result Report (AAAAAAA-53502-20080414.fcn)

Example of Type-3 Reconciliation:

- Transaction with settlement date is Thursday, May 1st, 2008 (holiday). In this case, the reconciliation for settlement date on Wednesday, April 31st, 2008 also included.
- Reconciliation date is Friday, May 2nd, 2008 and reconciliation process will be taken on Friday, May 2nd, 2008
- Reconciliation Files:
    - PLN-DJBB Transaction Report (AAAAAAA-53502-20080502.txt)
    - SWITCHING Transaction Report (AAAAAAA-53502-20080502.ftr)
    - CA Reconciliation (Suspect) Report (AAAAAAA-53502-20080502.rcn)
    - PLN-DJBB Final Reconciliation (Suspect) Result Report (AAAAAAA-53502-20080502.fcn)

SECTION 6
CONNECTION TESTING

Development

PLN-DJBB provides dedicated Development Application Server for development phase. This server has address 10.2.12.253:63100. Switching can connect to this server to test its application. Meter Number for testing purpose can be achieved from PLN-DJBB data center administrator. Please read following procedures how to do connection and functional testing using Development Application Server:

- Propose to PLN-DJBB Gateway Administrator to get a Switching Identification Code. These 7-digits must be registered at Gateway and sent as Switching ID in message stream. Each switching must have a unique identification code. If a switching sent message stream without a Switching ID or with an invalid/unregistered Switching ID, Gateway will responses with Unregistered Switching (response code = 0032).
- Register your 7-digits (number only) of bank code as switching partner. Bank Code is defined by Bank Indonesia (BI) as 3-digits of code. For compliance reason, switching can add zero right-padding to the code, e.g. if Bank X has BI Code 001, then the bank code must be registered to Gateway is 0010000. This information also must be sent as Bank Code in message stream. If a switching sent message stream without a Bank Code or with an invalid/unregistered Bank Code for the Switching ID, Gateway will response with Unregistered Bank Code (response code = 0031).

User Acceptance Test (UAT)

After development testing has been completed, switching can propose to PLN-DJBB to do a UAT. UAT will use Development Application Server connected to Development Database Server. The UAT result will determine a switching can start its operational or not using Production Gateway. UAT document can be obtained as separated document.

UAT scopes the following testing types:

- Functional Testing
  Test every implemented functions and check if the responses as expected or not (true/false). The testing items are described in UAT document.
- Performance Testing
  Customer service is one of primary concerns of PLN-DJBB. To serve better, switching as one of the service components must comply with all following performance constraints:
  - Since Prepaid Switching application must have speed to complete transactions with minimum 5 transactions per seconds (TPS). The testing scenario are:
    - Create a testing driver (client) application for switching application to simulate 1.000 transactions hit the switching application.
    - Get the start time and end time of execution to get how long the switching to complete those transactions.

TPS = 1.000 / time to complete (in seconds)

  - Switching must complete a transaction (inquiry or payment) maximum in 5 seconds (response time/RT). Time to complete also indicates the longest transaction has been taken, with maximum execution must be in 5 seconds also.

RT = time to complete (in seconds) / 1.000

Based on UAT result, PLN-DJBB will give further instruction how to connect to Production Application Server (Gateway) and ready for daily operations.

ATTACHMENT A
MESSAGE/PROTOCOL SPECIFICATION

Network Management Request Message

Message Type Identifier : 2800

Sender : SWITCHING

Purpose : Request network management action to GATEWAY

FIELD	NAME	SUB FIELD	TYPE	LENGTH	FORMAT	DESCRIPTION	ISO8583:2003	
							STANDARD	DATA ELEMENT
1	MTI		n	4		Message Type Indicator 2800 = NetMan Request	YES	
2	Bit Map		h	16		Bit Map 0010000001010000 = use field 12, 40, 48 of ISO8583:2003 Data Element	YES	1
6	Date & Time, Local Transaction		n	14	CCYYMMDDhhmmss	Date & Time of local transaction	YES	12
7	Action Code		n	3		001 = sign-on 002 = sign-off 301 = echo test	YES	40
8	Length of Additional Private Data		n	3	zero left-padding	Length of additional private data (sub field of data element 48) for MTI=2800 Sum of sub-field length 007	YES	48
9	Additional Private Data							
		Switcher ID	an	7	zero left-padding	Switcher Identification Code (provided by PLN) 0000000	Custom (sub data element 48:1)	48

Network Management Response Message

Message Type Identifier : 2810

Sender : GATEWAY

Purpose : Response the network management action request to SWITCHING

FIELD	NAME	SUB FIELD	TYPE	LENGTH	FORMAT	DESCRIPTION	ISO8583:2003	
							STANDARD	DATA ELEMENT
1	MTI		n	4		Message Type Indicator 2810 = NetMan Response	YES	
2	Bit Map		h	16		Bit Map 0010000003010000 = use field 12, 39, 40, 48 of ISO8583 Data Element	YES	1
6	Date & Time, Local Transaction		n	14	CCYYMMDDhhmmss	Date & Time of local transaction	YES	12
7	Response Code		n	4		0000 = successful 0005 = ERROR - Other 0011 = ERROR - Need to sign-on 0030 = ERROR - Invalid message 0032 = ERROR - Unregistered Switching 0068 = ERROR - Timeout 0090 = ERROR - Cut-off is in progress	YES	39
8	Action Code		n	3		001 = sign-on 002 = sign-off 301 = echo test	YES	40
9	Length of Additional Private Data		n	3	zero left-padding	Length of additional private data (sub field of data element 48) for MTI=2810 Sum of sub-fields length 007	YES	48
10	Additional Private Data							

		Switcher ID	an	7	zero left-padding	Identical to same field in network management request message	Custom (sub data element 48:1)	48

Inquiry Request Message

Message Type Identifier : 2100

Sender : SWITCHING

Purpose : Request security token to GATEWAY

FIELD	NAME	Sub Field	TYPE	LENGTH	FORMAT	DESCRIPTION	ISO8583:2003	
							STANDARD	DATA ELEMENT
1	MTI		n	4		Message Type Indicator 2100 = Inquiry Request	YES	
2	Bit Map Extended		h	16		Primary Bitmap 5030004100010000 = use field 2, 4, 11, 12, 26, 32, 48 of ISO8583:2003 Data Element	YES	1
3	Length of PAN		n	2	zero left-padding	Length of PAN 05	YES	2
4	Primary Account Number (PAN)		n	5		Billing Provider (2 chars, left zero padding) + Product ID (3 chars, left zero padding) Billing Provider = 53 (DJBB), Product ID = 502 (PRE-PAID) 53502	YES	2
5	Transaction Amount		n	16			YES	4
		ISO Currency Code	n	3		ISO Currency Code Indonesian Rupiah = 360 360	YES	4
		Currency Minor Unit	n	1		Number of decimal value 0 = no decimal value n = n-last digits of value amount are decimal values 0	YES	4

		Value Amount	n	12	zero left-padding	Purchase Amount for Vending Credit CA/Switching must substract the admin charge first from customer purchase amount if necessary 000000000000	YES	
6	Switcher Trace Audit Number		n	12		Switcher Trace Audit Number 000000000000	YES	11
7	Date & Time, Local Transaction		n	14	CCYYMMDDhhmmss	Date & Time of local transaction	YES	12
8	Merchant Category Code		n	4		6010 = Teller 6011 = ATM 6012 = POS 6013 = AutoDebit/giralisasi 6014 = Internet 6015 = Kiosk 6016 = Phone Banking / Call Center 6017 = Mobile Banking 6018 = EDC	YES	26
9	Length of Bank Code		n	2	zero left-padding	Length of Bank Code 07		32
10	Bank Code		an	7	zero left-padding	Bank Code (defined by Bank Indonesia) 0000000	YES	32
11	Length of Additional Private Data		n	3	zero left-padding	Length of additional private data (sub field of data element 48) for MTI=2200 Sum of sub-fields length 031	YES	48
12	Additional Private Data							
		Switcher ID	an	7	zero left-padding	Switcher Identification Code (provided by PLN) 0000000	Custom (sub data element 48:1)	48
		Meter Serial Number	n	11		Meter Serial Number	Custom (sub data element 48:2)	48

		Subscriber ID	n	12		RESERVED Currently is always set 000000000000	Custom (sub data element 48:3)	48
		Flag	n	1		RESERVED Currently is always set 0	Custom (sub data element 48:4)	48

Inquiry Response Message

Message Type Identifier : 2110

Sender : GATEWAY

Purpose : Response the inquiry request to SWITCHING

FIELD	NAME	SUB FIELD	TYPE	LENGTH	FORMAT	DESCRIPTION	ISO8583:2003	
							STANDARD	DATA ELEMENT
1	MTI		n	4		Message Type Indicator 2110 = Inquiry Response	YES	
2	Bit Map Extended		h	16		Primary Bitmap 5032004102010000 = use field 2, 4, 11, 12, 26, 32, 39, 48 of ISO8583:2003 Data Element	YES	1
3	Length of PAN		n	2	zero left-padding	Identical to same field in purchase request message	YES	2
4	Primary Account Number (PAN)		n	5		Identical to same field in purchase request message	YES	2
5	Transaction Amount		n	16			YES	4
		ISO Currency Code	n	3		Identical to same field in purchase request message	YES	4
		Currency Minor Unit	n	1		Identical to same field in purchase request message	YES	4
		Value Amount	n	12	zero left-padding	Identical to same field in purchase request message	YES	
6	Switcher Reference Number		n	12		Identical to same field in purchase request message	YES	11
7	Date & Time, Local Transaction		n	14	CCYYMMDDhhmmss	Identical to same field in purchase request message	YES	12
8	Merchant Category Code		n	4		Identical to same field in purchase request message	YES	26
9	Length of Bank Code		n	2	zero left-padding	Identical to same field in purchase request message		32

10	Bank Code		an	7	zero left-padding	Identical to same field in purchase request message	YES	32
11	Response Code (RC)		n	4		0000 = successful 0005 = ERROR - Other 0011 = ERROR - Need to sign-on 0015 = ERROR - Unknown Meter SN 0030 = ERROR - Invalid message 0031 = ERROR - Unregistered Bank Code 0032 = ERROR - Unregistered Switching 0033 = ERROR - Unregistered Product 0034 = ERROR - Unregistered Client (vending Unit) of Legacy System (please contact PLN) 0041 = ERROR - Transaction amount below minimum purchase amount 0042 = ERROR - Transaction amount exceed maximum purchase amount 0068 = ERROR - Timeout 0090 = Cut-off is in progress	YES	39
12	Length of Additional Private Data		n	3	zero left-padding	Length of additional private data (sub field of data element 48) for MTI=2210 Sum of sub-fields length 031 if RC != 0000 063 if RC = 0000	YES	48
13	Additional Private Data							
		Switcher ID	an	7	zero left-padding	Identical to same field in purchase request message	Custom (sub data element 48:1)	48
		Meter Serial Number	n	11		Identical to same field in purchase request message	Custom (sub data element 48:2)	48
		Subscriber ID	n	12		RESERVED Currently is always set 000000000000	Custom (sub data element 48:3)	48

		Flag	n	1		RESERVED Currently is always set 0	Custom (sub data element 48:4)	48
		PLN Reference Number	an	32		PLN Reference Number Available if RC=0000	Custom (sub data element 48:5)	48

Purchase Request Message

Message Type Identifier : 2200

Sender : SWITCHING

Purpose : Purchase power unit (token)

FIELD	NAME	SUB FIELD	TYPE	LENGTH	FORMAT	DESCRIPTION	ISO8583:2003	
							STANDARD	DATA ELEMENT
1	MTI		n	4		Message Type Indicator 2200 = Payment Request	YES	
2	Bit Map Extended		h	16		Primary Bitmap 5030004100010000 = use field 2, 4, 11, 12, 26, 32, 48 of ISO8583:2003 Data Element	YES	1
3	Length of PAN		n	2	zero left-padding	Length of PAN 05	YES	2
4	Primary Account Number (PAN)		n	5		Billing Provider (2 chars, left zero padding) + Product ID (3 chars, left zero padding) Billing Provider = 53 (DJBB), Product ID = 502 (PRE-PAID) 53502	YES	2
5	Transaction Amount		n	16			YES	4
		ISO Currency Code	n	3		ISO Currency Code Indonesian Rupiah = 360 360	YES	4
		Currency Minor Unit	n	1		Number of decimal value 0 = no decimal value n = n-last digits of value amount are decimal values 0	YES	4

		Value Amount	n	12	zero left-padding	Purchase Amount for Vending Credit CA/Switching must substract the admin charge first from customer purchase amount if necessary 000000000000	YES	
6	Switcher Trace Audit Number		n	12		Switcher Trace Audit Number 000000000000	YES	11
7	Date & Time, Local Transaction		n	14	CCYYMMDDhhmmss	Date & Time of local transaction	YES	12
8	Merchant Category Code		n	4		6010 = Teller 6011 = ATM 6012 = POS 6013 = AutoDebit/giralisasi 6014 = Internet 6015 = Kiosk 6016 = Phone Banking / Call Center 6017 = Mobile Banking 6018 = EDC	YES	26
9	Length of Bank Code		n	2	zero left-padding	Length of Bank Code 07		32
10	Bank Code		an	7	zero left-padding	Bank Code (defined by Bank Indonesia) 0000000	YES	32
11	Length of Additional Private Data		n	3	zero left-padding	Length of additional private data (sub field of data element 48) for MTI=2200 Sum of sub-fields length 095	YES	48
12	Additional Private Data							
		Switcher ID	an	7	zero left-padding	Switcher Identification Code (provided by PLN) 0000000	Custom (sub data element 48:1)	48
		Meter Serial Number	n	11		Meter Serial Number	Custom (sub data element 48:2)	48

		Subscriber ID	n	12		RESERVED Currently is always set 000000000000	Custom (sub data element 48:3)	48
		Flag	n	1		RESERVED Currently is always set 0	Custom (sub data element 48:4)	48
		PLN Reference Number	an	32		PLN Reference Number	Custom (sub data element 48:5)	48
		Switcher Receipt Reference Number	an	32	space right-padding	Switcher Receipt Reference Number	Custom (sub data element 48:6)	48

Purchase Response Message

Message Type Identifier : 2210

Sender : GATEWAY

Purpose : Response the purchase request to SWITCHING

FIELD	NAME	SUB FIELD	TYPE	LENGTH	FORMAT	DESCRIPTION	ISO8583:2003	
							STANDARD	DATA ELEMENT
1	MTI		n	4		Message Type Indicator 2210 = Purchase Response	YES	
2	Bit Map Extended		h	16		Primary Bitmap 5032004102010000 = use field 2, 4, 11, 12, 15, 26, 32, 39, 48 of ISO8583:2003 Data Element	YES	1
3	Length of PAN		n	2	zero left-padding	Identical to same field in purchase request message	YES	2
4	Primary Account Number (PAN)		n	5		Identical to same field in purchase request message	YES	2
5	Transaction Amount		n	16			YES	4
		ISO Currency Code	n	3		Identical to same field in purchase request message	YES	4
		Currency Minor Unit	n	1		Identical to same field in purchase request message	YES	4
		Value Amount	n	12	zero left-padding	Identical to same field in purchase request message	YES	
6	Switcher Reference Number		n	12		Identical to same field in purchase request message	YES	11
7	Date & Time, Local Transaction		n	14	CCYYMMDDhhmmss	Identical to same field in purchase request message	YES	12

9	Date, Settlement		n	8	CCYYMMDD	Date of settlement (refer to PLN cut-off for reconciliation purpose) For instance, if cut-off at 16:00:00 (PLN Gateway Time), then all purchase start from 16:00:01 must be reconciled as next-day transaction	YES	15
9	Merchant Category Code		n	4		Identical to same field in purchase request message	YES	26
10	Length of Bank Code		n	2	zero left-padding	Identical to same field in purchase request message		32
11	Bank Code		an	7	zero left-padding	Identical to same field in purchase request message	YES	32
12	Response Code (RC)		n	4		0000 = successful 0005 = ERROR - Other 0011 = ERROR - Need to sign-on 0015 = ERROR - Unknown Meter SN 0030 = ERROR - Invalid message 0031 = ERROR - Unregistered Bank Code 0032 = ERROR - Unregistered Switching 0033 = ERROR - Unregistered Product 0034 = ERROR - Unregistered Client (vending Unit) of Legacy System (please contact PLN) 0041 = ERROR - Transaction amount below minimum purchase amount 0042 = ERROR - Transaction amount exceed maximum purchase amount 0068 = ERROR - Timeout 0090 = Cut-off is in progress 0096 = ERROR - Transaction was not found on Legacy System 0097 = ERROR - Switching ID and/or Bank Code is not identical with inquiry 0098 = ERROR - PLN Reference Number is not valid	YES	39

13	Length of Additional Private Data		n	3	zero left-padding	Length of additional private data (sub field of data element 48) for MTI=2210 Sum of sub-fields length 095 if RC != 0000 240 if RC = 0000	YES	48
14	Additional Private Data							
		Switcher ID	an	7	zero left-padding	Identical to same field in purchase request message	Custom (sub data element 48:1)	48
		Meter Serial Number	n	11		Identical to same field in purchase request message	Custom (sub data element 48:2)	48
		Subscriber ID	n	12		Identical to same field in purchase request message	Custom (sub data element 48:3)	48
		Flag	n	1		Identical to same field in purchase request message	Custom (sub data element 48:4)	48
		PLN Reference Number	an	32		Identical to same field in purchase request message	Custom (sub data element 48:5)	48
		Switcher Receipt Reference Number	an	32	space right-padding	Identical to same field in purchase request message	Custom (sub data element 48:6)	48
		Vending Receipt Number	n	8	zero left-padding	Vending Receipt Number Available if RC=0000	Custom (sub data element 48:7)	48
		Subscriber Name	an	25	space right-padding	Subscriber Name Available if RC=0000	Custom (sub data element 48:8)	48
		Subscriber Segmentation	an	4		Subscriber Segmentation Available if RC=0000	Custom (sub data element 48:9)	48
		Power Consuming Category	n	9		Power Consuming Category Available if RC=0000 000000000	Custom (sub data element 48:10)	48

		Minor Unit of Admin Charge	n	1		Minor Unit of Admin Charge (RESERVED) Available if RC=0000 2 = means last 2 digits of admin charge amount are decimal values	Custom (sub data element 48:11)	48
		Admin Charge (AC)	n	10	zero left-padding	Administration Charges Available if RC=0000 Currently is always 0000000000	Custom (sub data element 48:12)	48
		Minor Unit of Stamp Duty	n	1		Minor Unit of Stamp Duty Available if RC=0000 2 = means last 2 digits of stamp duty amount are decimal values	Custom (sub data element 48:13)	48
		Stamp Duty (SD)	n	10	zero left-padding	Stamp Duty Available if RC=0000 0000000000	Custom (sub data element 48:14)	48
		Minor Unit of Value Added Tax	n	1		Minor Unit of Value Added Tax Available if RC=0000 2 = means last 2 digits of value added tax amount are decimal values	Custom (sub data element 48:15)	48
		Value Added Tax (VTx)	n	10	zero left-padding	Value Added Tax Available if RC=0000 0000000000	Custom (sub data element 48:16)	48
		Minor Unit of Public Lighting Tax	n	1		Minor Unit of Public Lighting Tax Available if RC=0000 2 = means last 2 digits of public lighting tax amount are decimal values	Custom (sub data element 48:17)	48
		Public Lightning Tax (PTx)	n	10	zero left-padding	Public Lightning Tax Available if RC=0000 0000000000	Custom (sub data element 48:18)	48
		Minor Unit of Customer Payables Installment	n	1		Minor Unit of Stamp Duty Available if RC=0000 2 = means last 2 digits of stamp duty amount are decimal values	Custom (sub data element 48:19)	48

		Customer Payables Installment (PI)	n	10	zero left-padding	Customer Payables Installment Available if RC=0000 0000000000	Custom (sub data element 48:20)	48
		Minor Unit of Power Purchase	n	1		Minor Unit of Power Purchase Available if RC=0000 2 = means last 2 digits of power purchase amount are decimal values	Custom (sub data element 48:21)	48
		Power Purchase (PP)	n	12	zero left-padding	Power Purchase Available if RC=0000 000000000000	Custom (sub data element 48:22)	48
		Minor Unit of Purchased KWH Unit	n	1		Minor Unit of Power Purchase Available if RC=0000 2 = means last 2 digits of purchased KWH unit amount are decimal values	Custom (sub data element 48:23)	48
		Purchased KWH Unit (KWH)	n	10	zero left-padding	Purchased KWH Unit Available if RC=0000 0000000000	Custom (sub data element 48:24)	48
		Token Number	n	20		Token number to be entered into Prepaid Meter Available if RC=0000 00000000000000000000	Custom (sub data element 48:25)	48

Purchase Advice (Repeat) Request Message

Message Type Identifier : 2220 / 2221

Sender : SWITCHING

Purpose : Advice about a purchase

FIELD	NAME	SUB FIELD	TYPE	LENGTH	FORMAT	DESCRIPTION	ISO8583:2003	
							STANDARD	DATA ELEMENT
1	MTI		n	4		Message Type Indicator 2220 = Purchase Advice Request 2221 = Purchase Advice Repeat Request	YES	
2	Bit Map Extended		h	16		Primary Bitmap 5030004100010000 = use field 2, 4, 11, 12, 26, 32, 48 of ISO8583:2003 Data Element	YES	1
3	Length of PAN		n	2	zero left-padding	Length of PAN 05	YES	2
4	Primary Account Number (PAN)		n	5		Billing Provider (2 chars, left zero padding) + Product ID (3 chars, left zero padding) Billing Provider = 53 (DJBB), Product ID = 502 (PRE-PAID) 53502	YES	2
5	Transaction Amount		n	16			YES	4
		ISO Currency Code	n	3		ISO Currency Code Indonesian Rupiah = 360 360	YES	4
		Currency Minor Unit	n	1		Number of decimal value 0 = no decimal value n = n-last digits of value amount are decimal values 0	YES	4

		Value Amount	n	12	zero left-padding	Purchase Amount for Vending Credit CA/Switching must substract the admin charge first from customer purchase amount if necessary 000000000000	YES	
6	Switcher Trace Audit Number		n	12		Switcher Trace Audit Number 000000000000	YES	11
7	Date & Time, Local Transaction		n	14	CCYYMMDDhhmmss	Date & Time of local transaction	YES	12
8	Merchant Category Code		n	4		6010 = Teller 6011 = ATM 6012 = POS 6013 = AutoDebit/giralisasi 6014 = Internet 6015 = Kiosk 6016 = Phone Banking / Call Center 6017 = Mobile Banking 6018 = EDC	YES	26
9	Length of Bank Code		n	2	zero left-padding	Length of Bank Code 07		32
10	Bank Code		an	7	zero left-padding	Bank Code (defined by Bank Indonesia) 0000000	YES	32
11	Length of Additional Private Data		n	3	zero left-padding	Length of additional private data (sub field of data element 48) for MTI=2220 Sum of sub-fields length 095	YES	48
12	Additional Private Data							
		Switcher ID	an	7	zero left-padding	Switcher Identification Code (provided by PLN) 0000000	Custom (sub data element 48:1)	48
		Meter Serial Number	n	11		Meter Serial Number	Custom (sub data element 48:2)	48

		Subscriber ID	n	12		RESERVED Currently is always set 000000000000	Custom (sub data element 48:3)	48
		Flag	n	1		RESERVED Currently is always set 0	Custom (sub data element 48:4)	48
		PLN Reference Number	an	32		PLN Reference Number Available if RC=0000	Custom (sub data element 48:5)	48
		Switcher Receipt Reference Number	an	32	space right-padding	Reference Number for Transaction Tracking (must be printed in receipt)	Custom (sub data element 48:6)	48

Purchase Advice (Repeat) Response Message

Message Type Identifier : 2230 / 2231

Sender : GATEWAY

Purpose : Response the purchase advice request to SWITCHING

FIELD	NAME	SUB FIELD	TYPE	LENGTH	FORMAT	DESCRIPTION	ISO8583:2003	
							STANDARD	DATA ELEMENT
1	MTI			4		Message Type Indicator 2230 = Purchase Advice Response 2231 = Purchase Advice Repeat Response	YES	
2	Bit Map Extended		h	16		Primary Bitmap 5032004102010000 = use field 2, 4, 11, 12, 15, 26, 32, 39, 48 of ISO8583:2003 Data Element	YES	1
3	Length of PAN		n	2	zero left-padding	Identical to same field in purchase advice request message	YES	2
4	Primary Account Number (PAN)		n	5		Identical to same field in purchase advice request message	YES	2
5	Transaction Amount		n	16			YES	4
		ISO Currency Code	n	3		Identical to same field in purchase advice request message	YES	4
		Currency Minor Unit	n	1		Identical to same field in purchase advice request message	YES	4
		Value Amount	n	12	zero left-padding	Identical to same field in purchase advice request message	YES	
6	Switcher Reference Number		n	12		Identical to same field in purchase advice request message	YES	11
7	Date & Time, Local Transaction		n	14	CCYYMMDDhhmmss	Identical to same field in purchase advice request message	YES	12

9	Date, Settlement		n	8	CCYYMMDD	Date of settlement (refer to PLN cut-off for reconciliation purpose) For instance, if cut-off at 16:00:00 (PLN Gateway Time), then all purchase advice start from 16:00:01 must be reconciled as next-day transaction	YES	15
9	Merchant Category Code		n	4		Identical to same field in purchase advice request message	YES	26
10	Length of Bank Code		n	2	zero left-padding	Identical to same field in purchase advice request message		32
11	Bank Code		an	7	zero left-padding	Identical to same field in purchase advice request message	YES	32

12	Response Code (RC)		n	4		0000 = successful 0005 = ERROR - Other 0011 = ERROR - Need to sign-on 0015 = ERROR - Unknown Meter SN 0030 = ERROR - Invalid message 0031 = ERROR - Unregistered Bank Code 0032 = ERROR - Unregistered Switching 0033 = ERROR - Unregistered Product 0034 = ERROR - Unregistered Client (vending Unit) of Legacy System (please contact PLN) 0041 = ERROR - Transaction amount below minimum purchase advice amount 0042 = ERROR - Transaction amount exceed maximum purchase advice amount 0068 = ERROR - Timeout 0090 = Cut-off is in progress 0096 = ERROR - Transaction was not found on legacy system 0097 = ERROR - Switching ID and/or Bank Code is not identical with purchase 0098 = ERROR - PLN Reference Number is not valid	YES	39
13	Length of Additional Private Data		n	3	zero left-padding	Length of additional private data (sub field of data element 48) for MTI=2230 Sum of sub-fields length 095 if RC != 0000 240 if RC = 0000	YES	48
14	Additional Private Data							
		Switcher ID	an	7	zero left-padding	Identical to same field in purchase advice request message	Custom (sub data element	48

							48:1)	
		Meter Serial Number	n	11		Identical to same field in purchase advice request message	Custom (sub data element 48:2)	48
		Subscriber ID	n	12		Identical to same field in purchase advice request message	Custom (sub data element 48:3)	48
		Flag	n	1		Identical to same field in purchase advice request message	Custom (sub data element 48:4)	48
		PLN Reference Number	an	32		PLN Reference Number Available if RC=0000	Custom (sub data element 48:5)	48
		Switcher Receipt Reference Number	an	32	space right-padding	Reference Number for Transaction Tracking (must be printed in receipt)	Custom (sub data element 48:6)	48
		Vending Receipt Number	n	8	zero left-padding	Vending Receipt Number Available if RC=0000	Custom (sub data element 48:7)	48
		Subscriber Name	an	25	space right-padding	Subscriber Name Available if RC=0000	Custom (sub data element 48:8)	48
		Subscriber Segmentation	an	4		Subscriber Segmentation Available if RC=0000	Custom (sub data element 48:9)	48
		Power Consuming Category	n	9		Power Consuming Category Available if RC=0000 000000000	Custom (sub data element 48:10)	48
		Minor Unit of Admin Charge	n	1		Minor Unit of Admin Charge (RESERVED) Available if RC=0000 2 = means last 2 digits of admin charge amount are decimal values	Custom (sub data element 48:11)	48
		Admin Charge (AC)	n	10	zero left-padding	Administration Charges Available if RC=0000 Currently is always 0000000000	Custom (sub data element 48:12)	48

		Minor Unit of Stamp Duty	n	1		Minor Unit of Stamp Duty Available if RC=0000 2 = means last 2 digits of stamp duty amount are decimal values	Custom (sub data element 48:13)	48
		Stamp Duty (SD)	n	10	zero left-padding	Stamp Duty Available if RC=0000 0000000000	Custom (sub data element 48:14)	48
		Minor Unit of Value Added Tax	n	1		Minor Unit of Value Added Tax Available if RC=0000 2 = means last 2 digits of value added tax amount are decimal values	Custom (sub data element 48:15)	48
		Value Added Tax (VTx)	n	10	zero left-padding	Value Added Tax Available if RC=0000 0000000000	Custom (sub data element 48:16)	48
		Minor Unit of Public Lighting Tax	n	1		Minor Unit of Public Lighting Tax Available if RC=0000 2 = means last 2 digits of public lighting tax amount are decimal values	Custom (sub data element 48:17)	48
		Public Lightning Tax (PTx)	n	10	zero left-padding	Public Lightning Tax Available if RC=0000 0000000000	Custom (sub data element 48:18)	48
		Minor Unit of Customer Payables Installment	n	1		Minor Unit of Stamp Duty Available if RC=0000 2 = means last 2 digits of stamp duty amount are decimal values	Custom (sub data element 48:19)	48
		Customer Payables Installment (PI)	n	10	zero left-padding	Customer Payables Installment Available if RC=0000 0000000000	Custom (sub data element 48:20)	48
		Minor Unit of Power Purchase	n	1		Minor Unit of Power Purchase Available if RC=0000 2 = means last 2 digits of power purchase advice amount are decimal values	Custom (sub data element 48:21)	48

		Power Purchase (PP)	n	12	zero left-padding	Power Purchase Available if RC=0000 000000000000	Custom (sub data element 48:22)	48
		Minor Unit of Purchased KWH Unit	n	1		Minor Unit of Power Purchase Available if RC=0000 2 = means last 2 digits of purchased KWH unit amount are decimal values	Custom (sub data element 48:23)	48
		Purchased KWH Unit (KWH)	n	10	zero left-padding	Purchased KWH Unit Available if RC=0000 0000000000	Custom (sub data element 48:24)	48
		Token Number	n	20		Token number to be entered into Prepaid Meter Available if RC=0000 00000000000000000000	Custom (sub data element 48:25)	48

Message Stream Examples

```
NETWORK MANAGEMENT:SIGN-ON
REQUEST  : 2800001000000101000020080502072300001007100000D3
RESPONSE : 2810001000000301000020080502072300000000100710000D3

NETWORK MANAGEMENT:SIGN-OFF
REQUEST  : 2800001000000101000020080502072300002007100000D3
RESPONSE : 2810001000000301000020080502072300000000200710000D3

INQUIRY: OK
REQUEST  : 2100503000410001000005535023600000000100000100000000000120080502072300601507011000003110000D31234567891100000000000000
RESPONSE :
211050320041020100000553502360000000010000010000000000012008050207230060150701100000000006310000D31234567891100000000000003DF0176A1F03DB74F5B8C4D39DC43F86

PURCHASE: OK
REQUEST  :
220050300041000100000553502360000000010000010000000000012008050207230060150701100000951000D31234567891100000000000003DF0176A1F03DB74F5B8C4D39DC43F860555774F6A
4E99648DA2C7C3691DD8F2
RESPONSE :
221050320041020100000553502360000000050000010000000000012008050207230020080502601507011000000002401000D31234567891100000000000003DF0176A1F03DB74F5B8C4D39DC43F
860555774F6A4E99648DA2C7C3691DD8F210000001SUBSCRIBER NAME          R1
00000045020000000000200003000002000219911520000659735200248500002000021991150200000233000123456789012345678 9

ADVICE: OK
REQUEST  :
222050300041000100000553502360000000010000010000000000012008050207430060150701100000951000D31234567891100000000000003DF0176A1F03DB74F5B8C4D39DC43F860555774F6A
4E99648DA2C7C3691DD8F2
RESPONSE :
223050320041020100000553502360000000050000010000000000012008050207430020080502601507011000000002401000D31234567891100000000000003DF0176A1F03DB74F5B8C4D39DC43F
860555774F6A4E99648DA2C7C3691DD8F210000001SUBSCRIBER NAME          R1
00000045020000000000200003000002000219911520000659735200248500002000021991150200000233000123456789012345678 9

ADVICE REPEAT: OK
REQUEST  :
222150300041000100000553502360000000010000010000000000012008050208030060150701100000951000D31234567891100000000000003DF0176A1F03DB74F5B8C4D39DC43F860555774F6A
4E99648DA2C7C3691DD8F2
RESPONSE :
223150320041020100000553502360000000050000010000000000012008050208030020080502601507011000000002401000D31234567891100000000000003DF0176A1F03DB74F5B8C4D39DC43F
860555774F6A4E99648DA2C7C3691DD8F210000001SUBSCRIBER NAME          R1
00000045020000000000200003000002000219911520000659735200248500002000021991150200000233000123456789012345678 9
```

ATTACHMENT B
RECONCILIATION SPECIFICATION

Transaction File by PLN-DJBB (.txt)

NO	COLUMN NAME	TYPE	LENGTH	FORMAT	DESCRIPTION	CHECKSUM ROW
1	Date & Time, Local Transaction	n	14	CCYYMMDDhhmmss	Date & Local time when the transaction takes place	CCYYMMDD000000
2	Switcher ID	an	7	zero left-padding	Switcher Identification Code	Switcher ID
3	Merchant Category Code	n	4	zero left-padding	Merchant Category Code	0000 (fixed)
4	PLN Reference Number	an	32		PLN Reference Number	Total number of transaction
5	Switcher Receipt Reference Number	an	32	space right-padding	Switcher Receipt Reference Number	00000000000000000000000000000000 (fixed)
6	Meter Number	n	11	space left-padding	Prepaid Meter Number	00000000000 (fixed)
7	Transaction Amount	n	12	zero left-padding	Total Charges must be paid (last two digits are decimal) TC = AC + SD + PTx + PI + PP	SUM (Transaction Amount)
8	Admin Charge (AC)	n	10	zero left-padding	Admin Charge (last two digits are decimal) Currently is always 0000000000	SUM(Admin Charge)
9	Stamp Duty (SD)	n	10	zero left-padding	Stamp Duty (last two digits are decimal)	SUM(Stamp Duty)
10	Value Added Tax (VTx)	n	10	zero left-padding	Value Added Tax (last two digits are decimal)	SUM(Value Added Tax)
11	Public Lighting Tax (PTx)	n	10	zero left-padding	Public Lighting Tax (last two digits are decimal)	SUM(Public Lighting Tax)
12	Customer Payable Installment (PI)	n	10	zero left-padding	Customer Payable Installment (last two digits are decimal)	SUM(Customer Payable Installment)
13	Power Purchase (PP)	n	12	zero left-padding	Purchased Power Amount	SUM(Purchased Power Amount)

					(last two digits are decimal)	
14	Purchased kWH unit (PU)	n	10	zero left-padding	Purchased kWH unit (last two digits are decimal)	SUM(Purchased kWH unit)
15	Token	n	20		Token to be entered to prepaid meter	00000000000000000000 (fixed)
16	Bank Code	an	7	zero left-padding	Bank Code (defined by Bank Indonesia)	Bank Code

Example

```
DT|SWITCHERID|MERCHANT|REFNUM|SREFNUM|METERNUM|TRAN_AMOUNT|ADMIN|RP_STAMPDUTY|RP_VAT|RP_PLT|RP_CPI|PP|PU|TOKEN|BANKCODE
20080725110511|10000D3|6015|42F92924B6274C2588F2985DF0B780B4|5BB033B188CD4274A89CF6F9B14FE88D|04176855916|000050000000|0000000000|0000300000|0000000000|000065
9735|0024850000|000021991150|0000023300|01234567890123456789|0110000
20080725121501|10000D3|6015|E4FDFC9D688B55E4A55747E89FCFC34B|0243A2610D0BA604350C95612DA22D18|07022752971|000050000000|0000000000|0000300000|0000000000|000065
9735|0024850000|000021991150|0000023300|01234567890123456789|0110000
20080725121511|10000D3|6015|31384A17FDCF7804659E2072931F009F|B7199141CEFB1604D163336C6B5A2D91|01325938973|000050000000|0000000000|0000300000|0000000000|000065
9735|0024850000|000021991150|0000023300|01234567890123456789|0110000
20080725000000|10000D3|6015|00000000000000000000000000000000|00000000000000000000000000000000|00000000000|000150000000|0000000000|0000900000|0000000000|000197
9205|0074550000|000065973450|0000069900|00000000000000000000|0110000
```

Above example shows PLN-DJBB generate recon file .txt contains transactions of 3 prepaid token purchases

Transaction File by SWITCHING (.ftr)

NO	COLUMN NAME	TYPE	LENGTH	FORMAT	DESCRIPTION	CHECKSUM ROW
1	Date & Time, Local Transaction	n	14	CCYYMMDDhhmmss	Date & Local time when the transaction takes place	CCYYMMDD000000
2	Switcher ID	an	7	zero left-padding	Switcher Identification Code	Switcher ID
3	Merchant Category Code	n	4	zero left-padding	Merchant Category Code	0000 (fixed)
4	PLN Reference Number	an	32		PLN Reference Number	Total number of transaction
5	Switcher Receipt Reference Number	an	32	space right-padding	Switcher Receipt Reference Number	00000000000000000000000000000000 (fixed)
6	Meter Number	n	11	space left-padding	Prepaid Meter Number	00000000000 (fixed)
7	Transaction Amount	n	10	zero left-padding	Total Charges must be paid (last two digits are decimal) TC = AC + SD + PTx + PI + PP	SUM (Transaction Amount)
8	Admin Charge (AC)	n	10	zero left-padding	Admin Charge (last two digits are decimal) Currently is always 0000000000	SUM(Admin Charge)
9	Stamp Duty (SD)	n	10	zero left-padding	Stamp Duty (last two digits are decimal)	SUM(Stamp Duty)
10	Value Added Tax* (VTx)	n	10	zero left-padding	Value Added Tax (last two digits are decimal)	SUM(Value Added Tax)
11	Public Lighting Tax (PTx)	n	10	zero left-padding	Public Lighting Tax (last two digits are decimal)	SUM(Public Lightning Tax)
12	Customer Payable Installment (PI)	n	10	zero left-padding	Customer Payablelinstallment (last two digits are decimal)	SUM(Customer Payable Installment)
13	Power Purchase (PP)	n	12	zero left-padding	Purchased Power Amount (last two digits are decimal)	SUM(Purchased Power Amount)
14	Purchased kWH unit (PU)	n	10	zero left-padding	Purchased kWH unit (last two digits are decimal)	SUM(Purchased kWH unit)
15	Token	n	20		Token to be entered to prepaid meter	00000000000000000000 (fixed)
16	Bank Code	an	7	zero left-padding	Bank Code (defined by Bank Indonesia)	Bank Code

Example

```
DT|SWITCHERID|MERCHANT|REFNUM|SREFNUM|METERNUM|TRAN_AMOUNT|ADMIN|RP_STAMPDUTY|RP_VAT|RP_PLT|RP_CPI|PP|PU|TOKEN|BANKCODE
20080725110511|10000D3|6015|42F92924B6274C2588F2985DF0B780B4|5BB033B188CD4274A89CF6F9B14FE88D|04176855916|000000500000|0000000000|000003000|0000000000|0000659
735|0024850000|000021991150|0000023300|01234567890123456789|0110000
20080725121501|10000D3|6015|E4FDFC9D688B55E4A55747E89FCFC34B|0243A2610D0BA604350C95612DA22D18|07022752971|000000500000|0000000000|000003000|0000000000|0000659
735|0024850000|000021991150|0000023300|01234567890123456789|0110000
20080725000000|10000D3|6015|00000000000000000000000000000000|00000000000000000000000000000000|00000000000|000001000000|0000000000|000006000|0000000000|0001319
470|0049700000|000043982300|0000046600|0000000000000000000|0110000
```

Above example shows SWITCHING generate recon file .ftr contains transactions of 2 prepaid token purchases.

Reconciliation File by CA (.rcn)

NO	COLUMN NAME	TYPE	LENGTH	FORMAT	DESCRIPTION	CHECKSUM ROW
1	Reconciliation Result Type	n	1		1 = Force Purchase 2 = Cancel Purchase	0
1	Date & Time, Local Transaction	n	14	CCYYMMDDhhmmss	Date & Local time when the transaction takes place	CCYYMMDD000000
2	Switcher ID	an	7	zero left-padding	Switcher Identification Code	Switcher ID
3	Merchant Category Code	n	4	zero left-padding	Merchant Category Code	0000 (fixed)
4	PLN Reference Number	an	32		PLN Reference Number	Total number of transaction
5	Switcher Receipt Reference Number	an	32	space right-padding	Switcher Receipt Reference Number	00000000000000000000000000000000 (fixed)
6	Meter Number	n	11	space left-padding	Prepaid Meter Number	00000000000 (fixed)
7	Transaction Amount	n	10	zero left-padding	Total Charges must be paid (last two digits are decimal) TC = AC + SD + PTx + PI + PP	SUM (Transaction Amount)
8	Admin Charge (AC)	n	10	zero left-padding	Admin Charge (last two digits are decimal) Currently is always 0000000000	SUM(Admin Charge)
9	Stamp Duty (SD)	n	10	zero left-padding	Stamp Duty (last two digits are decimal)	SUM(Stamp Duty)
10	Value Added Tax (VTx)	n	10	zero left-padding	Value Added Tax (last two digits are decimal)	SUM(Value Added Tax)
11	Public Lighting Tax (PTx)	n	10	zero left-padding	Public Lighting Tax (last two digits are decimal)	SUM(Public Lighting Tax)
12	Customer Payable Installment (PI)	n	10	zero left-padding	Customer Payable Installment (last two digits are decimal)	SUM(Customer Payable Installment)
13	Power Purchase (PP)	n	12	zero left-padding	Purchased Power Amount (last two digits are decimal)	SUM(Purchased Power Amount)
14	Purchased kWH unit (PU)	n	10	zero left-padding	Purchased kWH unit (last two digits are decimal)	SUM(Purchased kWH unit)
15	Token	n	20		Token to be entered to prepaid meter	00000000000000000000 (fixed)

16	Bank Code	an	7	zero left-padding	Bank Code (defined by Bank Indonesia)	Bank Code

Example

```
FLAG|DT|SWITCHERID|MERCHANT|REFNUM|SREFNUM|METERNUM|TRAN_AMOUNT|ADMIN|RP_STAMPDUTY|RP_VAT|RP_PLT|RP_CPI|PP|PU|TOKEN|BANKCODE
2|20080725121511|10000D3|6015|31384A17FDCF7804659E2072931F009F|B7199141CEFB1604D163336C6B5A2D91|01325938973|000000500000|0000000000|000003000|0000000000|00006
59735|0024850000|000021991150|0000023300|01234567890123456789|0110000
0|20080725000000|10000D3|6015|00000000000000000000000000000000|00000000000000000000000000000000|00000000000|000000500000|0000000000|000003000|0000000000|00006
59735|0024850000|000021991150|0000023300|00000000000000000000|0110000
```

Above example shows CA generate recon file .rcn contains intersection result of two recon files (.txt from PLN-DJBB and .ftr from SWITCHING). It is based on earlier examples of .txt dan .ftr.

Final Reconciliation File by PLN-DJBB (.fcn)

NO	COLUMN NAME	TYPE	LENGTH	FORMAT	DESCRIPTION	CHECKSUM ROW
1	Reconciliation Result Type	n	1		3 = Success for FORCE purchase request 4 = Fail for for FORCE purchase request 5 = Success for CANCEL purchase request 6 = Fail for for CANCEL purchase request	0
1	Date & Time, Local Transaction	n	14	CCYYMMDDhhmmss	Date & Local time when the transaction takes place	CCYYMMDD000000
2	Switcher ID	an	7	zero left-padding	Switcher Identification Code	Switcher ID
3	Merchant Category Code	n	4	zero left-padding	Merchant Category Code	0000 (fixed)
4	PLN Reference Number	an	32		PLN Reference Number	Total number of transaction
5	Switcher Receipt Reference Number	an	32	space right-padding	Switcher Receipt Reference Number	00000000000000000000000000000000 (fixed)
6	Meter Number	n	11	space left-padding	Prepaid Meter Number	00000000000 (fixed)
7	Transaction Amount	n	10	zero left-padding	Total Charges must be paid (last two digits are decimal) TC = AC + SD + PTx + PI + PP	SUM (Transaction Amount)
8	Admin Charge (AC)	n	10	zero left-padding	Admin Charge (last two digits are decimal) Currently is always 0000000000	SUM(Admin Charge)
9	Stamp Duty (SD)	n	10	zero left-padding	Stamp Duty (last two digits are decimal)	SUM(Stamp Duty)
10	Value Added Tax* (VTx)	n	10	zero left-padding	Value Added Tax (last two digits are decimal)	SUM(Value Added Tax)
11	Public Lighting Tax (PTx)	n	10	zero left-padding	Public Lighting Tax (last two digits are decimal)	SUM(Public Lighting Tax)
12	Customer Payable installment (PI)	n	10	zero left-padding	Customer Payable Installment (last two digits are decimal)	SUM(Customer Payable Installment)
13	Power Purchase (PP)	n	12	zero left-padding	Purchased Power Amount (last two digits are decimal)	SUM(Purchased Power Amount)

14	Purchased kWH unit (PU)	n	10	zero left-padding	Purchased kWH unit (last two digits are decimal)	SUM(Purchased kWH unit)
15	Token	n	20		Token to be entered to prepaid meter	00000000000000000000 (fixed)
16	Bank Code	an	7	zero left-padding	Bank Code (defined by Bank Indonesia)	Bank Code

Example

```
FLAG|DT|SWITCHERID|MERCHANT|REFNUM|SREFNUM|METERNUM|TRAN_AMOUNT|ADMIN|RP_STAMPDUTY|RP_VAT|RP_PLT|RP_CPI|PP|PU|TOKEN|BANKCODE
5|20080725121511|10000D3|6015|31384A17FDCF7804659E2072931F009F|B7199141CEFB1604D163336C6B5A2D91|01325938973|000000500000|0000000000|000003000|0000000000|00006
59735|0024850000|000021991150|0000023300|01234567890123456789|0110000
0|20080725000000|10000D3|6015|00000000000000000000000000000000|00000000000000000000000000000000|00000000000|000000500000|0000000000|000003000|0000000000|00006
59735|0024850000|000021991150|0000023300|00000000000000000000|0110000
```

Above example shows PLN-DJBB generate recon file .fcn contains processing result (APPROVE or REJECT) to each rows of recon file .rcn sent by CA. PLN-DJBB will check row per row and do manual checking to transaction log which must be provided by SWITCHING accompanying recon file .rcn if there is minimal 1 suspect transaction in .rcn.

ATTACHMENT C
RECONCILIATION CONTROL FILE SPECIFICATION

Specification

All reconciliation control files have same specification as following:

NO	COLUMN NAME	TYPE	LENGTH	FORMAT	DESCRIPTION
1	Total Number of Transaction	n	32	zero left-padding	Total number of transaction (CHECKSUM VALUE OF FIELD PLN REFERENCE NUMBER)
2	Total of Transaction Amount	n	12	zero left-padding	Total Transaction Amount Payable to PLN (CHECKSUM VALUE OF FIELD TOTAL Transaction Amount) (last two digits are decimal)

Example

Example of reconciliation control file content:

```
00000000000000000000000000000002|0001000000
```

This content means there is 2 prepaid token purchases with total amount of transaction Rp. 1.000.000,00.

ATTACHMENT D
LOG FILE SPECIFICATION

Description

Suspect Transaction Log file:

- Must be provided if there is minimal one suspect transaction in reconciliation file .rcn
- Contains logged message streams were sent to and received from GATEWAY by SWITCHING
- Has filename format AAAAAAA-53502-CCYYMMDD.log

HINT: Primary conditions that a suspect (cancel) transaction can be approved by PLN-DJBB are suspect transactions occurs when broken network link and execution of advice procedures. Suspect (force) transaction should not be occurred in major conditions.

Specification

NO	COLUMN NAME	TYPE	LENGTH	FORMAT	DESCRIPTION
1	Transaction Date-Time	n	14	CCYYMMDDhhmmss	Transaction Date-Time
2	PLN Reference Number	an	32		PLN Reference Number
3	Meter Number	n	11		Meter Number
4	Transaction Amount	n	12	zero left-padding	Total Charges must be paid (payable to PLN) (last two digits are decimal) TC = AC + SD + PTx + PI + PP
5	Message Stream	ans			Logged Message Stream

NOTE: The content must be ordered by Meter Number in ascending, then Transaction Date-Time in ascending. Each field is delimited with pipe (|) character.

Example

```
20080725121511|31384A17FDCF7804659E2072931F009F|01325938973|0000120000|INQUIRY_REQUEST_STREAM
20080725121511|31384A17FDCF7804659E2072931F009F|01325938973|0000120000|INQUIRY_RESPONSE_STREAM
20080725121512|31384A17FDCF7804659E2072931F009F|01325938973|0000120000|PURCHASE_REQUEST_STREAM
20080725121532|31384A17FDCF7804659E2072931F009F|01325938973|0000120000|ADVICE_REQUEST_STREAM
20080725121552|31384A17FDCF7804659E2072931F009F|01325938973|0000120000|ADVICE_REPEAT_REQUEST_STREAM
20080725121612|31384A17FDCF7804659E2072931F009F|01325938973|0000120000|ADVICE_REPEAT_REQUEST_STREAM
```

NOTE: INQUIRY_REQUEST_STREAM and others in same field represents the real message stream. Current use is for practical writing reason only.

Above example shows that transaction for Meter Number 01325938973 with purchase amount 500.000 is failed and the SWITCHING sends advice and two advice-repeat requests without response from GATEWAY (this condition probably because of broken network link). If there is a suspect (cancel) transaction (in file .rcn) for that Meter Number with above transaction logs, the suspect (cancel) transaction will be processed without further verification. Otherwise, manual verification must be taken between PLN-DJBB and SWITCHING.