GSMA Hackathon – Easypaisa Integration Guide

Version 1.1

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Document Information

Version History

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Introduction

For GSMA Hackathon, following list of Easypaisa transactions (both subscriber and merchant initiated) are exposed using which developers can come up with ideas, build solutions and financial products to complete the GSMA challenges.

Using these APIs developers can perform bill payments, money transfers, merchant payments and cash deposit functionalities into their products. API list is provided below:

1. Get Company List
2. Bill Inquiry
3. Bill Payment
4. Merchant Payment
5. Deposit into Account
6. Money Transfer to Mobile Account
7. Money Transfer to Bank Account

1.   Getting Started

All APIs are authorized through OAuth2 token generated from generate token API provided below, access token returned is then passed in header as Bearer.

1.1   Generate Token

*   Generate Oauth access token by using below URL in post request.
*   Use (Basic Base64Encode(consumer_key:consumer_secret) as Authorization header with provided URL to generate token.
*   Consumer_key and consumer_secret will be pre-shared at event.
*   Oauth token is valid for 60 minutes, after which a new token is to be generated.

 URL: https://api.telenor.com.pk/oauthtoken/v1/generate?grant_type=client_credentials

2.   API Fundamentals

2.1   URI

All services exposed are harmonized on Mobile Money standards and use the following URI format:

https://api.telenor.com.pk/{version}/mm/{Resource}

Where:
*   Version is as per standards defined in the API Versioning section. Initial version is v1.1
*   mm is literal for 'Mobile Money'
*   Resource identifies the object and resource that is the subject of the API.

2.2   Operations

These API supports two types of HTTP operations as shown below:

• **POST:** Used to perform financial transactions.
• **GET:** Used to return a representation of resources.

2.3   HTTP Header Information

The following header information can be supplied for the mobile money API.

Header	Value	Optionality	Notes
Authorization	Oath Bearer	Mandatory	Bearer {token returned from generate token API}
X-API-Key	Pre shared key to be passed	Mandatory	"TelenorAPIGW"
X-Channel	Pre shared channel to be passed for transactions	Mandatory	Details provided in below table
X-User-Credential-1	Used to pass end user credentials for account	Mandatory	base64Encode(username:password) base64Encode(userid@msisdn:pin) base64Encode(msisdn:pin) details provided in below table
Content-Type	application/json	Optional	Mandatory in POST request

2.4   User credentials and channel details

Below are the formats/values to be used for user credentials and channel header against all APIs.

APIs	Credentials Type	X-User Credentials	X-Channel
Get Company List	System User	Pre-shared credentials	gsma1
Bill Inquiry	System User	Pre-shared credentials	gsma1
Bill Payment	Merchant Credentials	base64Encode(userid@msisdn:pin)	gsmamerchant
Merchant Payment	Merchant Credentials	Pre-shared credentials	gsmamerchant
Deposit into Account	Merchant Credentials	base64Encode(userid@msisdn:pin)	gsmamerchant
Money Transfer to Mobile Account	Subscriber Credentials	base64Encode(msisdn:pin)	gsma2
Money Transfer to Bank Account	Subscriber Credentials	base64Encode(msisdn:pin)	gsma2

3.   Get Company List

This API is used to fetch biller company details which include company names, service provider accounts and categories for registered bill companies. It is static data and can be dumped into respective databases for further use. GET operation is used for this API and URI for this is given below.

URL:
https://api.telenor.com.pk/v1.1/mm/billcompanies

3.1   Request:

Request body is empty as this is a GET operation.

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3.2   Response:

Parameter	Type	Optionality	Description	Value
Company name	String	Mandatory	Display name for bill company	
Service provider	String	Mandatory	Company code to be passed for Bill inquiry and payment	
Sub type	String	Mandatory	Subcategory for bill company. Example (water, solar)	
Type	String	Mandatory	Type of company for payment	

3.3   JSON Response

Response

```json
{
   "companies": [
          {
                    "company_name": "AJK-BARKIYAT",
                    "service_provider":
"electricity_barkiyatajk.sp",
                    "sub_type": "Electricity",
                    "type": "Bill"
          },
          {
                    "company_name": "AJK-BARKIYAT",
                    "service_provider":
"electricity_barkiyatajk.sp",
                    "sub_type": "Electricity",
                    "type": "Bill"
          }
          ],
          "description": "success",
          "resultCode": "00"
 }
```

4.   Bills API

The Bills API is used for inquiry of billing details against a specific consumer number for a company. This is a GET operation where the consumer number, customer MSISDN and bill company details (service provider returned from get companies list) are passed in URL as given below:

URL:
https://api.telenor.com.pk/v1.1/mm/account/msisdn@923xxxxxxxxx$consumerno@xxxxxxx$billcompany@electricity_fesco.sp/bills

4.1   Request Parameters:

Request body is empty as this is a GET operation.

4.2   Response Parameters:

Parameter	Type	Optionality	Description	Value
Amount Due	String	Mandatory	Amount due for bill payment	Amount due for specific consumer number and billing company is returned which is

				passed in Bill Payment API
Currency	String	Mandatory	Currency of amount	"PKR"
Due date	Date	Mandatory	Due date for bill payment	Due date for bill payment is returned
Bill Status	String	Mandatory	Bill Status for provided consumer number and billing company	Status for the bill

4.3   JSON Response:

Response

```
{
   "currency": "PKR",
   "amountDue": "10.00",
   "dueDate": "170930",
   "billStatus": "unpaid",
   "metadata": [
      {
         "key": "Description",
         "value": "PROCESSED_OK"
      },
      {
         "key": "ResultCode",
         "value": "00"
      }
   ]
}
```

5.   Bill payments API

Bill Payments API allows merchant to pay bills for customer over the counter. With this API a specific bill associated with a consumer number can be paid for customer. Customer MSISDN is to be passed in URL in given format. Action for this API would be POST and URL format is given below,

URL:
https://api.telenor.com.pk/v1.1/mm/accounts/msisdn@923xxxxxxxxx/bills/0/payments

5.1   Request Parameters:

Parameter	Type	Optionality	Description	Value
Paid Amount	String	Mandatory	Amount for bill payment	Enter the amount for transaction returned from bill inquiry API against specific consumer number
Currency	String	Mandatory	Currency of amount	"PKR"
Supplementary Bill Reference Details	Ref Array	Mandatory	Addition billing details for bill payment	Consumer number and billing company details to be passed as payment reference type/payment reference value pair

5.2   Response Parameters:

Parameter	Type	Optionality	Description	Value
Paid Amount	String	Mandatory	Amount for payment	Amount paid by customer
Currency	String	Mandatory	Currency of amount	"PKR"
Customer Reference	String	Mandatory	Transaction receipt for paid bill	Transaction ID for executed transaction is returned
Supplementary Bill Reference Details	Ref Array	Mandatory	Addition billing details for bill payment	Description and result code for transaction are returned as payment reference type/payment reference value pair

5.3   JSON Request/Response:

Request	Response
``{
"currency": "PKR",
"paidAmount": "5.00",
"supplementaryBillReferenceDetails": [
{
"paymentReferenceType": "consumerno",
"paymentReferenceValue": "01131130009720"
},
{
"paymentReferenceType": "billcompany",
"paymentReferenceValue": "electricity_fesco.sp"
}
]
}```	```{
"currency": "PKR",
"paidAmount": "5.00",
"customerReference": "1124745",
"supplementaryBillReferenceDetails": [
{
"paymentReferenceType": "description",
"paymentReferenceValue": "success"
},
{
"paymentReferenceType": "resultCode",
"paymentReferenceValue": "00"
}
]
}```

6.   Merchant Payment

Merchant Payment transactions enable customers to buy goods and pay through their Easypaisa accounts to merchants. Transactions are initiated from merchant accounts where customer gets a USSD popup for mobile account pin confirmation, upon successful verification amount is debited form customers account and crediting into merchant account

This API uses a POST operation and URL is given below.

URL:
https://api.telenor.com.pk/debitma/v1.1/mm/transactions

6.1   Request Parameters:

Parameter	Type	Optionality	Description	Value
Amount	String	Mandatory	Amount for payment	Enter the amount for transaction
Currency	String	Mandatory	Currency of amount	"PKR"
Type	String	Mandatory	The harmonized Transaction Type	"merchantpay"

Sub Type	String	Mandatory	A non-harmonized sub-classification of the type of transaction.	"debitMA"
Request Date	Date Time	Mandatory	The creation date and time of the transaction.	Enter the date of initiation
Debit Party	Ref Array	Mandatory	Debit party information	MSISDN of debit party to be passed in key/value pair
Credit Party	Ref Array	Mandatory	Credit Party information	Store ID of merchant to be passed in key/value pair
Sender KYC information	Ref Array	Mandatory	Sender KYC information	Email address of subscriber to be passed for notification.
Requesting Organization Transaction Reference	String	Mandatory	Order ID for the goods purchased from merchant.	This order ID for each transaction must be unique for each item.

6.2 Response Parameters:

Parameter	Type	Optionality	Description	Value
Amount	String	Mandatory	Amount for payment	Amount paid by customer
Currency	String	Mandatory	Currency of amount	"PKR"
Type	String	Mandatory	The harmonized Transaction Type	"merchantpay"
Transaction Status	String	Mandatory	Status for transactions	Status of executed transaction
Request Date	Date Time	Mandatory	The creation date and time of the transaction.	Date of executed transaction
Transaction Reference	String	Mandatory	Reference of transaction executed	Transaction ID of transaction is returned
Debit Party	Ref Array	Mandatory	Debit party information	MSISDN of debit party is returned in key/value pair
Credit Party	Ref Array	Mandatory	Credit Party information	Store ID of merchant is returned in key/value pair

6.3 JSON Request/Response:

Request	Response
```{ "amount": "10.00", "currency": "PKR", "type": "merchantpay", "subType": "debitMA", "requestDate": "2017-08-16T11:32:03.449Z", "debitParty": [{ "key": "msisdn", "value": "923458559561" }], "creditParty": [{ "key": "storeid",```	```{ "amount": "10.00", "currency": "PKR", "type": "merchantpay", "transactionStatus": "Success", "requestDate": "2017-08-16T11:32:03.449Z", "transactionReference": "1122655", "debitParty": [{ "key": "msisdn", "value": "03458559561" }], "creditParty": [{```

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```
    "value": "641"                                              "key": "storeid",
  }                                                             "value": "641"
],                                                            }
 "senderKyc": {                                             ]
 "emailAddress": "os@as.com"                              }
  },
"requestingOrganisationTransactionReference": "1234567"
}
```

7.   Deposit into Account

This transaction is used to deposit cash into customers account via merchant. Customers handovers the cash to the merchants over the counter, merchant initiates' cash deposit for the customer in his own or any other mobile account.

This API uses a POST operation and URL is given below.

URL:
https://api.telenor.com.pk/otctoma/v1.1/mm/transactions

7.1   Request Parameters:

Parameter	Type	Optionality	Description	Value
Amount	String	Mandatory	Amount for payment	Enter the amount for transaction
Currency	String	Mandatory	Currency of amount	"PKR"
Type	String	Mandatory	The harmonized Transaction Type	"transfer"
Sub Type	String	Mandatory	A non-harmonized sub-classification of the type of transaction.	"otcToMa"
Request Date	Date Time	Mandatory	The creation date and time of the transaction.	Enter the date of initiation
Debit Party	Ref Array	Mandatory	Debit party information	MSISDN of debit party to be passed in key/value pair
Credit Party	Ref Array	Mandatory	Credit Party information	MSISDN of credit party to be passed in key/value pair
Sender KYC information	Ref Array	Mandatory	Sender KYC information	CNIC of sender to be passed in ID document parameter

7.2   Response Parameters:

Parameter	Type	Optionality	Description	Value
Amount	String	Mandatory	Amount for payment	Amount deposited into customer account
Currency	String	Mandatory	Currency of amount	"PKR"
Type	String	Mandatory	The harmonized Transaction Type	"transfer"
Transaction Status	String	Mandatory	Status for transactions	Status of executed transaction

Request Date	Date Time	Mandatory	The creation date and time of the transaction.	Date of executed transaction
Transaction Reference	String	Mandatory	Reference of transaction executed	Transaction ID of transaction is returned
Debit Party	Ref Array	Mandatory	Debit party information	MSISDN of debit party is returned in key/value pair
Credit Party	Ref Array	Mandatory	Credit Party information	MSISDN of credit party is returned in key/value pair
Metadata	Ref Array	Mandatory	Extra information array	Fee applied on transaction is returned in key/value pair

7.3   JSON Request/Response:

Request	Response
<pre>{
"amount": "101.00",
"currency": "PKR",
"type": "transfer",
"subType": "otcToMa",
"requestDate": "2017-08-16T11:32:03.449Z",
"debitParty": [
{
"key": "msisdn",
"value": "923458559561"
}
],
"creditParty": [
{
"key": "msisdn",
"value": "923458509176"
}
],
"senderKyc": {
"idDocument": [
{
"idType": "nationalidcard",
"idNumber": "3740566581693"
}
]
}
}</pre>	<pre>{
"amount": "101.00",
"currency": "PKR",
"type": "transfer",
"transactionStatus": "Success",
"requestDate": "2017-08-16T11:32:03.449Z",
"transactionReference": "1125187",
"debitParty": [
{
"key": "msisdn",
"value": "923458559561"
}
],
"creditParty": [
{
"key": "msisdn",
"value": "923458509176"
}
],
"metadata": [
{
"key": "fee",
"value": "15.00"
}
]
}</pre>

8.   Money Transfer to Mobile Account

This transaction is used to transfer funds from one mobile account into another mobile account, transactions are initiated from subscriber account by provided subscriber credentials in header.

This API uses a POST operation and URL is given below.

URL:
https://api.telenor.com.pk/transferMA/v1.1/mm/transactions

8.1   Request Parameters:

Parameter	Type	Optionality	Description	Value
Amount	String	Mandatory	Amount for payment	Enter the amount for transaction
Currency	String	Mandatory	Currency of amount	"PKR"

Type	String	Mandatory	The harmonized Transaction Type	"transfer"
Sub Type	String	Mandatory	A non-harmonized sub-classification of the type of transaction.	"MA"
Request Date	Date Time	Mandatory	The creation date and time of the transaction.	Enter the date of initiation
Debit Party	Ref Array	Mandatory	Debit party information	MSISDN of debit party to be passed in key/value pair
Credit Party	Ref Array	Mandatory	Credit Party information	MSISDN of credit party to be passed in key/value pair
Sender KYC information	Ref Array	Mandatory	Sender KYC information	Sender name to be passed in name tag
Receiver KYC information	Ref Array	Mandatory	Receiver KYC information	Receiver name to be passed in name tag

8.2   Response Parameters:

Parameter	Type	Optionality	Description	Value
Amount	String	Mandatory	Amount for payment	Amount deposited into customer account
Currency	String	Mandatory	Currency of amount	"PKR"
Type	String	Mandatory	The harmonized Transaction Type	"transfer"
Transaction Status	String	Mandatory	Status for transactions	Status of executed transaction
Request Date	Date Time	Mandatory	The creation date and time of the transaction.	Date of executed transaction
Transaction Reference	String	Mandatory	Reference of transaction executed	Transaction ID of transaction is returned
Debit Party	Ref Array	Mandatory	Debit party information	MSISDN of debit party is returned in key/value pair
Credit Party	Ref Array	Mandatory	Credit Party information	MSISDN of credit party is returned in key/value pair
Metadata	Ref Array	Mandatory	Extra information array	Fee and tax applied on transaction is returned in key/value pair

8.3   JSON Request/Response:

Request	Response

{
  "amount": "10.00",
  "currency": "PKR",
  "type": "transfer",
  "subType": "MA",
  "requestDate": "2017-08-16T11:32:03.449Z",
  "debitParty": [
    {
      "key": "msisdn",
      "value": "923458559561"
    }
	{
	  "amount": "10.00",
	  "currency": "PKR",
	  "type": "transfer",
	  "transactionStatus": "Success",
	  "requestDate": "2017-08-16T11:32:03.449Z",
	  "transactionReference": "1125192",
	  "debitParty": [
	    {
	      "key": "msisdn",
	      "value": "923458559561"

```
    ],                                                              }
    "creditParty": [                                            ],
      {                                                           "creditParty": [
        "key": "msisdn",                                            {
        "value": "923455109903"                                      "key": "msisdn",
      }                                                               "value": "923455109903"
    ],                                                               }
    "senderKyc": {                                               ],
      "Name": "adeel"                                            "metadata": [
    },                                                             {
    "recipientKyc": {                                               "key": "fee",
      "Name": "osama"                                               "value": "0.00"
    }                                                              },
}                                                                 {
                                                                    "key": "tax",
                                                                    "value": "0"
                                                                  }
                                                               ]
                                                             }
```

9.   Money Transfer to Bank Account

This transaction is used to transfer funds from customer's mobile account into any bank account. Transaction is initiated from customer account where funds are debited from mobile account and transferred to provided bank account.

This API uses a POST operation and URL is given below.

URL:
https://api.telenor.com.pk/transferBank/v1.1/mm/transactions

9.1   Request Parameters:

Parameter	Type	Optionality	Description	Value
Amount	String	Mandatory	Amount for payment	Enter the amount for transaction
Currency	String	Mandatory	Currency of amount	"PKR"
Type	String	Mandatory	The harmonized Transaction Type	"transfer"
Sub Type	String	Mandatory	A non-harmonized sub-classification of the type of transaction.	"Bank"
Request Date	Date Time	Mandatory	The creation date and time of the transaction.	Enter the date of initiation
Debit Party	Ref Array	Mandatory	Debit party information	MSISDN of debit party to be passed in key/value pair
Credit Party	Ref Array	Mandatory	Credit Party information	Bank account number, account title and bank name of credit party to be passed in key/value pair
Sender KYC information	Ref Array	Mandatory	Sender KYC information	Sender name to be passed in name tag

9.2   Response Parameters:

Parameter	Type	Optionality	Description	Value

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Amount	String	Mandatory	Amount for payment	Amount deposited into customer account
Currency	String	Mandatory	Currency of amount	"PKR"
Type	String	Mandatory	The harmonized Transaction Type	"transfer"
Transaction Status	String	Mandatory	Status for transactions	Status of executed transaction
Request Date	Date Time	Mandatory	The creation date and time of the transaction.	Date of executed transaction
Transaction Reference	String	Mandatory	Reference of transaction executed	Transaction ID of transaction is returned
Debit Party	Ref Array	Mandatory	Debit party information	MSISDN of debit party is returned in key/value pair
Credit Party	Ref Array	Mandatory	Credit Party information	Bank account number, account title and bank name of credit party is returned in key/value pair
Metadata	Ref Array	Mandatory	Extra information array	Fee and tax applied on transaction is returned in key/value pair

9.3 JSON Request/Response:

Request	Response

```
{
 "amount": "100",
 "currency": "PKR",
 "type": "transfer",
 "subType": "Bank",
 "requestDate": "2017-08-16T11:32:03.449Z",
 "debitParty": [
  {
    "key": "msisdn",
    "value": "923458559561"
  }
 ],
 "creditParty": [
  {
    "key": "bankaccountno",
    "value": "00020000011005325"
  },
   {
    "key": "bankaccounttitle",
    "value": " ONELINK ATM TEST CARD251"
  },
   {
    "key": "bankname",
    "value": "bankaccount_mod.sp"
  },
  {
        "key": "msisdn",
        "value": "923458508160"
  }
 ],
 "senderKyc": {
  "Name": "usama"
 }
}
```

```
{
 "amount": "10.00",
 "currency": "PKR",
 "type": "transfer",
 "transactionStatus": "Success",
 "requestDate": "2017-08-16T11:32:03.420Z",
 "transactionReference": "1231231",
 "debitParty": [
  {
    "key": "sender_msisdn",
    "value": "923458559561"
  }
 ],
 "creditParty": [
  {
    "key": "bankname",
    "value": "bankaccount_mod.sp"
  },
        {
    "key": "accountno",
    "value": "00020000011005325"
  },
        {
    "key": "accounttitle",
    "value": "ONELINK ATM TEST CARD251"
  }
 ],
 "metadata": [
  {
    "key": "fee",
    "value": "0.0"
  },
        {
    "key": "tax",
```

```
            "value": "0.0"
          }
        ]
      }
```

10.   Error Handling

Error handling for all API's is generic with below response where error category, error code and description are changed.

Error Code	Description	Response

00	Success	{
		  "errorCategory": "COULD_NOT_PERFORM_OPERATION",
		  "errorCode": "500",
		  "errorDescription": "COULD_NOT_PERFORM_OPERATION",
		  "errorDateTime": "Sat Sep 30 2017 03:24:09 GMT+0500 (PKT)",
		  "errorParameters": [
		    {
		      "key": "requestId",
		      "value": "11849-1904-4"
		    }
		  ]
		}

0001	System Error	
0002	Required field is missing	
0003	Invalid Order ID	
0004	Merchant Account does not exist	
0005	Merchant Account is not active	
0006	Store does not exist	
0007	Store is not active	
01	Invalid Access Token	
02	Bad Request: Qouta limit reached.	
03	Invalid URL	
04	Payload validation failed. {ErrorDetail}	
11	Spike limit reached. Please try later.	
10	Invalid account number	
13	Invalid Request Payload	
401	Invalid authentication	
404	Invalid channel	
500	Resource not found / invalid resource	
504	Timeout	