

FROM MOBILE TELEPHONY
TO INTERNET-OF-THINGS



Switching Info API

TECHNICAL DESCRIPTION

Version 1.4

Document Revisions

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1 INTRODUCTION

According to the new Switching process established by the Ofcom, certain information relating to Switching must be sent via SMS to any customer wishing to know their termination fees or to obtain switch code. A switch code can be a PAC (with mobile number portability) or a STAC (without mobile number portability).

1.1 TECHNICAL ARCHITECTURE

The general exchange flows are described below when a customer wishes to obtain a switching code or their switching information only.

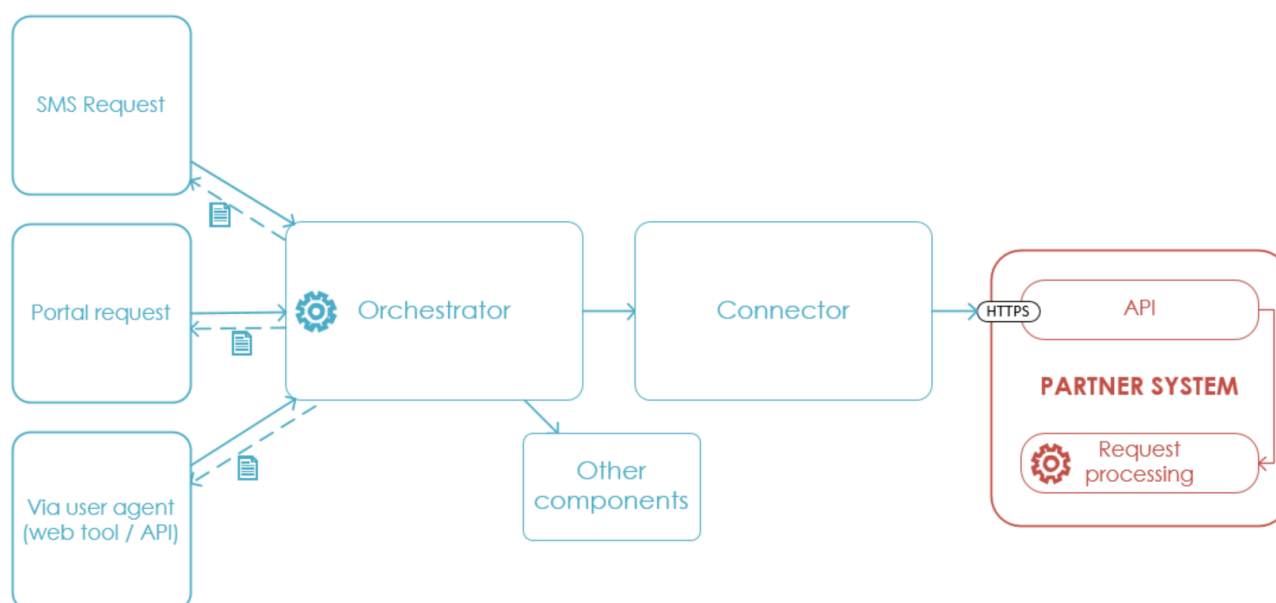
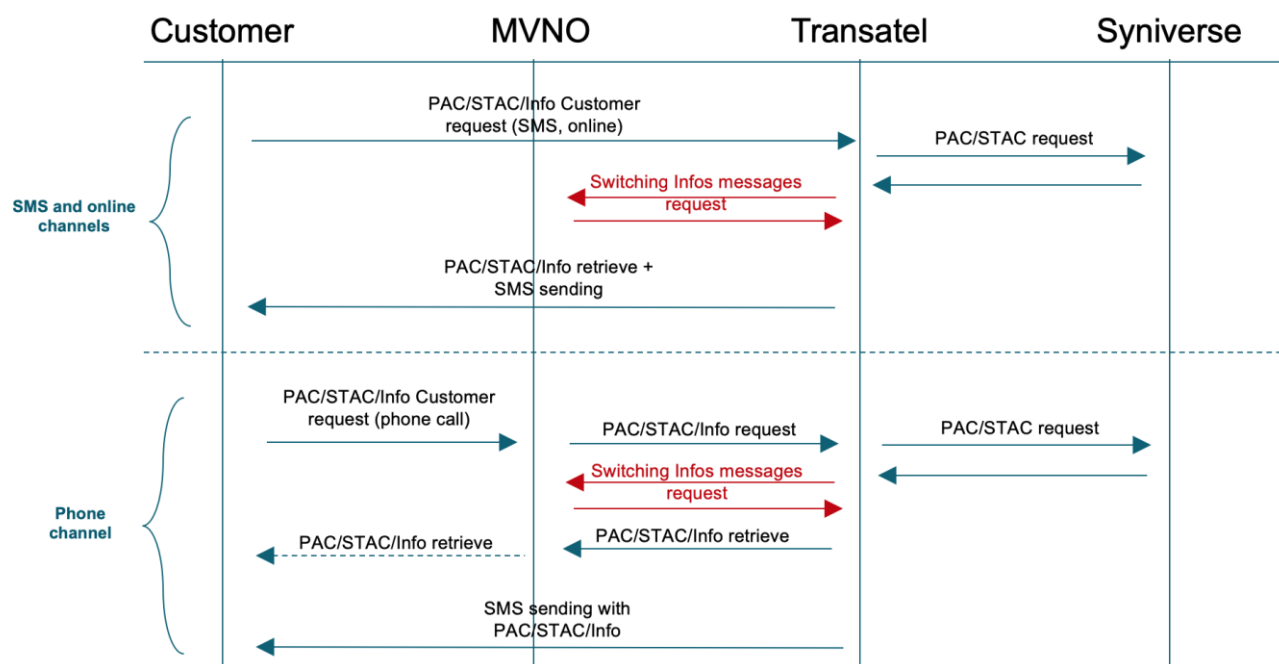


Figure 1 – Switching info request architecture overview

1.2 OVERVIEW

The general exchange flows are described below when a customer wishes to obtain a switching code or their switching information only.



The purpose of this document is to describe how the Switching Information should be made available to TRANSATEL by the MVNO.

The objective is for the MVNO to construct the messages to be sent to the subscriber as and when TRANSATEL will call the MVNO's API.

1.3 API DESCRIPTION

TRANSATEL expect the MVNO to expose a REST API producing JSON content.

The TLS protocol will be used to secure the communication channel and the caller will be identified through credential checks using HTTP basic authentication.

Transatel will make all efforts to maintain backward compatibility so that the API may be enriched in the future with new methods or new optional fields. It is therefore asked to the partner to be resilient to such evolutions through:

- Rejection of unknown resource or verbs respectively with code 404 and 405
- Ignoring unknown fields as those could be future options

1.3.1 Transport security

The confidentiality of the communication channel relies on the TLS 1.2 specifications.

Also, the certificate configured on the server must be communicated to Transatel to be accepted as a valid endpoint.

1.3.2 Authentication

The authentication is based on the RFC 7617, and uses the "basic" method. Thus, every request sent by the module will contain the appropriate HTTP headers, and the server must check the credentials and reply with HTTP 401 if the credentials don't match those stored in the server.

2 SWITCHING INFO MESSAGES

2.1 REQUEST

2.1.1 Location

The endpoint should be reachable, via a GET request, through the following location:

<https://mvno-url/msisdns/{msisdn}/switchingInfo/{infoType}/messages>

2.1.2 URL Parameter

Parameter	Description
msisdn	The msisdn for which the Switching Info are required. It must be formatted in E164 (international telephone number) format without the preceding plus ('+') sign. For example: 447123456789
infoType	The type of information that the messages should contain. Possible values are "pac", "stac" and "info" as per the original request.

2.2 RESPONSE

2.2.1 Response Format

Upon **success**:

- In the response **header** the HTTP status code is 200 OK or 206 Partial Content
- The response **body** contains a *SwitchingInfoMessages* JSON object

Note: In some cases, the MVNO may decide that some of the requested information should not be sent to the final user. In such a case, the response status code will be 206 Partial Content. For example, if the subscriber is not eligible for a PAC code, upon a PAC request the 206 code will be used and a message explaining the reason and procedure will be provided to be returned to the caller.

Upon **error**:

- In the response **header** the HTTP status code is an error code
- The response **body** contains an *Error* JSON object

2.2.2 SwitchingInfoMessage object

Field	Type	Occurrences	Description
shortText	string [0..500]	1	A text field representing the message to be sent to the final user via SMS . When relevant, it may contain a key word . If so, TRANSATEL will replace this key word by the corresponding value.
longText	String [0..4000]	1	A text field representing the message to be display through the MVNO portal . The key words replacement is also applicable to this field.

In both messages, the following key words will be replaced by the actual values by TRANSATEL systems:

Key Word	Allowed in INFO requests	Description
\${CREDIT_BALANCE}	Yes	Will be replaced by the remaining credit balance
\${CODE}	No	Will be replaced by the switch code (PAC or STAC)
\${CODE_EXPIRATION_DATE}	No	Will be replaced by the switch code expiration date

The response to an INFO request should not include any restricted keywords such as **\${CODE}** and **\${CODE_EXPIRATION_DATE}**. Otherwise, it will be rejected.

The keyword **CREDIT_BALANCE** is to be used only for prepaid customers.

2.2.3 Error Object

Field	Type	Occurrences	Description
message	String	[0..1]	A short description of the cause of the error.

2.2.4 Status Codes

Status code	Description
200	OK - The request has succeeded. The client can read the result of the request in the body and the headers of the response.
206	Partial Content - Only a part of the requested content was transmitted. Used for information when a subscriber requests a code and is not eligible; in this case the short

	and long text should not include the keywords relating to the code.
400	Bad Request - Invalid request or input parameters
401	Unauthorized - The request requires user authentication or, if the request included authorization credentials, authorisation has been refused for those credentials.
404	Not Found - The requested resource could not be found. In case when the MSISDN is not known by the MVNO.
500	Internal Server Error - The MVNO system cannot handle the request for some internal reason

2.3 NON-FUNCTIONAL ASPECTS

A timeout of 5 seconds will be applied from the caller side. Responses that will be returned after this delay will be discarded and the originating request will receive an error message.

2.4 EXAMPLES

2.4.1 Curl Request Example

```
curl -X GET https://mvno-  
url/msisdns/447123456789/switchingInfo/pac/messages
```

2.4.2 Response Example

The response body will contain an object like the one below (in this example both short text and long text are identical, but more details could be provided in the long text if desired).

```
{  
  "shortText": "Dear customer, your PAC is ${CODE} and will expire on  
${CODE_EXPIRATION_DATE}. Your current credit balance is  
£${CREDIT_BALANCE}. You will lose any remaining balance if you decide to  
change providers. For more information, please visit https://switch-  
portal.co.uk/",  
  "longText": "Dear customer, your PAC is ${CODE} and will expire on  
${CODE_EXPIRATION_DATE}. Your current credit balance is  
£${CREDIT_BALANCE}. You will lose any remaining balance if you decide to  
change providers. For more information, please visit https://switch-  
portal.co.uk/"  
}
```

3 APPENDIX

3.1 GLOSSARY

TERM	DEFINITION
MNP	Mobile Number Portability
MVNO	Mobile Virtual Network Operator
Ofcom	Office of Communications, the regulator for the communications services
PAC	Porting Authorisation Code
STAC	Service Termination Authorisation Code
TLS	Transport Layer Security
TSL	Transatel



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