

GSMA Roaming Database

IR.21 Data

RAEX IR.21 Information

| | |
|----------------------------|----------------|
| Creation date: | 2022-03-02 |
| Creation time: | 21:31:52+01:00 |
| File type: | IR.21 |
| Sender TADIG: | PANCL |
| Publish Comment: | PANCL |
| TADIG-GEN schema version: | 2.4 |
| RAEX-IR.21 schema version: | 15.0 |

ORGANISATION INFORMATION

Section ID: 1 (Mandatory)

| | |
|---------------------------|--------------------|
| Organisation name: | Claro Panamá, S.A. |
| Country initials: | PAN |

History of changes

| TADIG Code | Section ID | Section | Date | Description |
|------------|------------|-----------------------------------|------------|------------------------------------------------------------------------------|
| PANCL | 13 | Network Elements Information | 2022-03-02 | Add VLR |
| PANCL | 17 | IP Roaming/Networking Information | 2022-01-17 | Remove DNS servers |
| PANCL | 16 | Packet Data Service Information | 2021-06-01 | Adding Web APN (IMS for VoLTE only) & Adding IPV6 |
| PANCL | 20 | LTE Roaming Information | 2021-06-01 | Adding VoLTE information (IMS, QoS Profile, Vdras) & Adding IPV6 information |
| PANCL | 21 | Contact Information | 2021-06-01 | Updated Contact Information |
| PANCL | 26 | VoLTE Roaming Information Section | 2021-06-01 | Adding VoLTE Section |
| PANCL | 4 | Routing Information | 2020-09-30 | New MSISDN Number Range |
| PANCL | 17 | IP Roaming/Networking Information | 2020-07-16 | Add DNS Servers |
| PANCL | 17 | IP Roaming/Networking Information | 2020-07-16 | Add IP Backbone |
| PANCL | 17 | IP Roaming/Networking Information | 2020-07-15 | Update GRX provider |
| PANCL | 20 | LTE Roaming Information | 2020-07-15 | Update IPX provider |
| PANCL | 21 | Contact Information | 2020-06-26 | Contact List |
| PANCL | 21 | Contact Information | 2020-06-26 | Contact List |
| PANCL | 4 | Routing Information | 2020-03-05 | New MSISDN Range 617XXXXX |
| PANCL | 13 | Network Elements Information | 2020-02-14 | New PGW |
| PANCL | 17 | IP Roaming/Networking Information | 2020-02-14 | New IP Range |
| PANCL | 13 | Network Elements Information | 2019-10-01 | New PGW -C and SPGW |
| PANCL | 17 | IP Roaming/Networking Information | 2019-10-01 | New IP Address Range |
| PANCL | 17 | IP Roaming/Networking Information | 2019-04-15 | Add ASN |
| PANCL | 13 | Network Elements Information | 2019-02-06 | New SMSC |
| PANCL | 4 | Routing Information | 2018-08-23 | MSRN ranges update |
| PANCL | 5 | International SCCP Gateway | 2018-08-23 | International SCCP Carrier change |
| PANCL | 16 | Packet Data Service Information | 2018-08-23 | APN type |
| PANCL | 17 | IP Roaming/Networking Information | 2018-08-23 | GRX provider added |
| PANCL | 20 | LTE Roaming Information | 2018-08-23 | EPC Realms |
| PANCL | 20 | LTE Roaming Information | 2018-08-23 | EPC Realms |
| PANCL | 20 | LTE Roaming Information | 2018-08-23 | IPX provider |
| PANCL | 21 | Contact Information | 2018-08-23 | Contact List Changes |
| PANCL | 13 | Network Elements Information | 2017-06-09 | Delete SGSN 50762000922, Delete MSS 50762090006 |
| PANCL | 13 | Network Elements Information | 2017-05-23 | Delete MSC/VLR 50762090006 |
| PANCL | 20 | LTE Roaming Information | 2016-06-06 | LTE Roaming Information |
| PANCL | 13 | Network Elements Information | 2016-06-02 | Add SGW |
| PANCL | 21 | Contact Information | 2016-06-02 | Contact list change |
| PANCL | 21 | Contact Information | 2016-02-10 | Changes in contacts |
| PANCL | 13 | Network Elements Information | 2015-11-24 | New IN GT |
| PANCL | 4 | Routing Information | 2015-08-19 | New MSRN Number Ranges |
| PANCL | 17 | IP Roaming/Networking Information | 2015-08-19 | ASN Number change |
| PANCL | 4 | Routing Information | 2015-06-01 | New MSC MSS02PAN |
| PANCL | 17 | IP Roaming/Networking Information | 2015-06-01 | ASN change and it appears on Routing section |
| PANCL | 13 | Network Elements Information | 2015-05-29 | New MSC MSS02PAN |
| PANCL | 4 | Routing Information | 2015-03-30 | New ASN |
| PANCL | 17 | IP Roaming/Networking Information | 2015-03-30 | ASN change and it appears on Routing section |
| PANCL | 17 | IP Roaming/Networking Information | 2015-01-07 | ASN4B Change |
| PANCL | 17 | IP Roaming/Networking Information | 2014-11-27 | New ASN |
| PANCL | 17 | IP Roaming/Networking Information | 2014-11-27 | PMN IP Backbone |
| PANCL | 13 | Network Elements Information | 2014-10-08 | Delete HLR 507 62090001 |

| TADIG Code | Section ID | Section | Date | Description |
|------------|------------|-----------------------------------|------------|--------------------------------------|
| PANCL | 17 | IP Roaming/Networking Information | 2014-09-23 | Delete IP Backbone |
| PANCL | 17 | IP Roaming/Networking Information | 2014-04-24 | New SGSN and GGSN |
| PANCL | 17 | IP Roaming/Networking Information | 2014-03-25 | DNS Name |
| PANCL | 4 | Routing Information | 2014-03-21 | New MSISDN ranges |
| PANCL | 13 | Network Elements Information | 2014-03-21 | New HLR |
| PANCL | 4 | Routing Information | 2014-01-24 | E.214 Mobile Global Title Change |
| PANCL | 17 | IP Roaming/Networking Information | 2014-01-17 | New PMN IP Backbone |
| PANCL | 4 | Routing Information | 2013-12-04 | New MSISDN Range 629XXXXX, 630XXXXX |
| PANCL | 4 | Routing Information | 2013-12-04 | New MSISDN Ranges 629xxxxx, 630xxxxx |
| PANCL | 16 | Packet Data Service Information | 2013-11-26 | New SGSN |
| PANCL | 16 | Packet Data Service Information | 2013-11-26 | New SGSN |
| PANCL | 5 | International SCCP Gateway | 2013-11-19 | Change |
| PANCL | 13 | Network Elements Information | 2013-11-19 | New SGSN |
| PANCL | 13 | Network Elements Information | 2013-11-19 | New SGSN |
| PANCL | 13 | Network Elements Information | 2013-11-18 | New SGSN |
| PANCL | 16 | Packet Data Service Information | 2013-11-18 | New SGSN |
| PANCL | 16 | Packet Data Service Information | 2013-08-30 | WAP Port Number |
| PANCL | 4 | Routing Information | 2013-07-08 | New MSISDN Range 507 628X XXXX |
| PANCL | 17 | IP Roaming/Networking Information | 2013-06-20 | New PMN IP Backbone |
| PANCL | 21 | Contact Information | 2013-05-22 | Troubleshooting Contact List |
| PANCL | 21 | Contact Information | 2013-05-22 | Contact List |
| PANCL | 21 | Contact Information | 2013-05-22 | Contact List |
| PANCL | 21 | Contact Information | 2013-05-22 | Office Hours |
| PANCL | 21 | Contact Information | 2013-05-22 | Contact list |
| PANCL | 21 | Contact Information | 2013-05-22 | Contact list |
| PANCL | 21 | Contact Information | 2013-05-22 | E-mails Address |
| PANCL | 21 | Contact Information | 2013-05-22 | Contact List |
| PANCL | 21 | Contact Information | 2013-05-22 | CONTACT LIST |
| PANCL | 21 | Contact Information | 2013-05-22 | PANCLIR21 |
| PANCL | 4 | Routing Information | 2012-12-03 | New NDC |
| PANCL | 21 | Contact Information | 2012-12-03 | IR.21 Distribution List |
| PANCL | 21 | Contact Information | 2012-11-30 | Contacts |
| PANCL | 5 | International SCCP Gateway | 2012-11-29 | International SCCP Gateway added |

NETWORK

TADIG code: PANCL

Section ID: 2 (Mandatory, Repeating)

| | |
|--------------------------------------------------|------------------------|
| TADIG code: | PANCL |
| Network name: | Claro Panama |
| Network type: | Terrestrial |
| Technology: | Frequency list: |
| 2G-GSM frequencies: | PCS 1900 |
| 3G-UTRA/FDD frequencies: | 2 - PCS 1900 |
| 3G-UTRA/TDD frequencies: | Unsupported |
| 4G-E-UTRAN frequencies: | 28 - 700 MHz APAC |
| 4G-E-UTRAN-MIoT-LTE-M frequencies: | Unsupported |
| 4G-E-UTRAN-MIoT-NB-IoT frequencies: | Unsupported |
| MIoT-NB-IoT deployment modes: | Unsupported |
| 5G NR frequencies: | Unsupported |
| Other technology - VoLTE: | 1900 |
| Presentation of country initials and MNN: | Claro Panamá |
| Abbreviated MNN: | PANCL |

NETWORK INFORMATION

TADIG code: PANCL
Section ID: 3 (Mandatory)

The following information refer to the network identified by TADIG code PANCL

ROUTING INFORMATION

TADIG code: PANCL

Section ID: 4 (Mandatory)

Effective date of change: 2020-11-15

| CCITT E.164 Number series | Country Code (CC) | National Destination Code (NDC) | SN Range Start | SN Range Stop | Primary International DPC | Secondary International DPC | MVNO Number | Location |
|---------------------------------|-------------------|---------------------------------|----------------|---------------|---------------------------|-----------------------------|-------------|----------|
| MSISDN number ranges (s) | | | | | | | | |
| | 507 | 620 | | | | | | |
| | 507 | 621 | | | | | | |
| | 507 | 622 | | | | | | |
| | 507 | 623 | | | | | | |
| | 507 | 624 | | | | | | |
| | 507 | 625 | | | | | | |
| | 507 | 626 | | | | | | |
| | 507 | 627 | | | | | | |
| | 507 | 628 | | | | | | |
| | 507 | 629 | | | | | | |
| | 507 | 630 | | | | | | |
| | 507 | 631 | | | | | | |
| | 507 | 632 | | | | | | |
| | 507 | 617 | | | | | | |
| | 507 | 618 | | | | | | |

| | | | | | | | | |
|---------------------------------------------------|-----|-----|-------|-------|--|--|--|--|
| Network Nodes Global Title Number Range(s) | | | | | | | | |
| | 507 | 620 | | | | | | |
| MSRN Number Range(s) | | | | | | | | |
| | 507 | 620 | 91500 | 91999 | | | | |
| | 507 | 620 | 92500 | 92999 | | | | |

| E. 212 Number series | Mobile Country Code (MCC) | Mobile Network Code (MNC) |
|----------------------|---------------------------|---------------------------|
| | 714 | 03 |

| E. 214 Mobile Global Title (MGT) | Country Code of MGT (CC) | Network Code of MGT (NC) |
|----------------------------------|--------------------------|--------------------------|
| | 507 | 62 |

| | |
|---------------------------------|-----|
| Does Number Portability apply ? | Yes |
|---------------------------------|-----|

| | |
|--------------------------------|----|
| Is 15 Digit MSISDN Supported ? | No |
|--------------------------------|----|

| | |
|-----------------|------|
| USIM SIM Header | 5076 |
|-----------------|------|

History of changes

| Date | Description |
|------------|---------------------------|
| 2020-09-30 | New MSISDN Number Range |
| 2020-03-05 | New MSISDN Range 617XXXXX |
| 2018-08-23 | MSRN ranges update |
| 2015-08-19 | New MSRN Number Ranges |
| 2015-06-01 | New MSC MSS02PAN |
| 2015-03-30 | New ASN |
| 2014-03-21 | New MSISDN ranges |

| Date | Description |
|------------|--------------------------------------|
| 2014-01-24 | E.214 Mobile Global Title Change |
| 2013-12-04 | New MSISDN Range 629XXXXX, 630XXXXX |
| 2013-12-04 | New MSISDN Ranges 629xxxxx, 630xxxxx |
| 2013-07-08 | New MSISDN Range 507 628X XXXX |
| 2012-12-03 | New NDC |

INTERNATIONAL SCCP GATEWAY

TADIG code: PANCL

Section ID: 5 (Optional)

Effective date of change: 2018-10-31

| International SCCP carrier list | |
|----------------------------------|-------------------------------------------------------------------------------------------|
| SCCP carrier name: | TATA Communications (Former VSNL/Teleglobe) - ITU |
| Connectivity information: | Primary |
| MNO TADIG code list: | |
| DPC info: | |
| Signature: | VPD |
| Type: | SCCPSTP |
| International DPC: | 3.4.1 |
| Comments: | 3-004-1 is the alias point code used for Montreal STP (3-006-0) and Toronto STP (3-005-0) |
| DPC info: | |
| Signature: | VPP |
| Type: | SCCPSTP |
| International DPC: | 3.10.7 |
| Comments: | 3-010-7 is the alias point code used for London STP (3-011-0) and Frankfurt STP (3-011-1) |
| DPC info: | |
| Signature: | . |
| Type: | SCCPSTP |
| International DPC: | 4.8.1 |
| Comments: | 4-008-1 is the alias point code used for Mumbai STP (4-007-5) and Delhi STP (4-007-6) |
| SCCP carrier name: | TATA Communicatinos (Former VSNL/Teleglobe) - ANSI |
| Connectivity information: | Primary |
| MNO TADIG code list: | |
| DPC info: | |
| Signature: | VPD |
| Type: | SCCPSTP |
| International DPC: | 3.4.1 |
| Comments: | 3-004-1 is the alias point code used for Montreal STP (3-006-0) and Toronto STP (3-005-0) |
| DPC info: | |
| Signature: | VPP |
| Type: | SCCPSTP |
| International DPC: | 3.10.7 |
| Comments: | 3-010-7 is the alias point code used for London STP (3-011-0) and Frankfurt STP (3-011-1) |
| DPC info: | |
| Signature: | . |
| Type: | SCCPSTP |
| International DPC: | 4.8.1 |
| Comments: | 4-008-1 is the alias point code used for Mumbai STP (4-007-5) and Delhi STP (4-007-6) |

History of changes

| Date | Description |
|------------|-----------------------------------|
| 2018-08-23 | International SCCP Carrier change |
| 2013-11-19 | Change |
| 2012-11-29 | International SCCP Gateway added |

SUBSCRIBER IDENTITY AUTHENTICATION

TADIG code: PANCL

Section ID: 8 (Optional)

Effective date of change: 2011-08-15

| Authentications | Performed (Yes / No) |
|-------------------------------------------------------------------------------------|----------------------|
| Authentication performed for Roaming subscribers at the commencement of GSM service | Yes |
| Authentication performed for roaming subscribers in case of GPRS | N/A |
| A5 Cipher Algorithm version in use | |

History of changes

MOBILE APPLICATION PART (MAP)

TADIG code: PANCL

Section ID: 10 (Optional)

Effective date of change: 2011-07-29

| Interworking specifically for roaming | | | | |
|-----------------------------------------------|---------------------------|-------------|-------------------------|-----------------|
| Application context name | Current version in | | | Comments |
| | Inbound roaming | | Outbound roaming | |
| | MSC/VLR | SGSN | Outbound roaming | |
| networkLocUp | MAPv3 | N/A | MAPv3 | |
| roamingNumberEnquiry | MAPv3 | N/A | MAPv3 | |
| InfoRetrieval | MAPv2 | MAPv2 | MAPv2 | |
| subscribeDataMngt | MAPv3 | MAPv3 | MAPv3 | |
| networkFunctionalSs | MAPv2 | N/A | MAPv2 | |
| mwdMngt | MAPv2 | MAPv2 | MAPv2 | |
| shortMsgMT-Relay (called shortMsgRelay in v1) | MAPv2 | MAPv2 | MAPv2 | |
| shortMsgMO-Relay (called shortMsgRelay in v1) | MAPv2 | MAPv2 | MAPv2 | |
| ss-InvocationNotification | MAPv3 | N/A | MAPv3 | |
| subscriberInfoEnquiry | MAPv3 | MAPv3 | MAPv3 | |
| gprsLocationUpdate | N/A | MAPv3 | MAPv3 | |
| locationCancellation | MAPv2 | MAPv3 | MAPv2 | |
| msPurging | MAPv2 | MAPv3 | MAPv2 | |
| reset | MAPv2 | MAPv2 | MAPv2 | |
| networksUnstructuredSs | MAPv2 | N/A | MAPv2 | |
| reporting | MAPv3 | N/A | MAPv3 | |
| callCompletion | MAPv3 | N/A | MAPv3 | |
| istAlerting | - | N/A | - | |
| service Termination | - | N/A | - | |
| locationSvcGateway | N/A | N/A | - | |
| mm-EventReporting | MAPv3 | N/A | MAPv3 | |
| authenticationFailureReport | MAPv3 | MAPv3 | MAPv3 | |
| imsiRetrieval | MAPv2 | N/A | MAPv2 | |
| gprsNotifyContext | N/A | - | - | |
| gprsLocationInfoRetrieval | N/A | MAPv3 | MAPv3 | |
| failureReport | N/A | - | - | |
| secureTransportHandling | - | - | - | |

History of changes

MAP Optimal Routing Section

TADIG code: PANCL
Section ID: 11 (Optional)

Effective date of change: 2011-07-29

| MAP Optimal Routing of mobile - to - mobile calls | | | | |
|---------------------------------------------------|--------------------|-------|-------|----------|
| Application Context Name | Current version in | | | Comments |
| | MSC | GMSC | HLR | |
| CallControlTransfer | - | - | N/A | |
| LocationInfoRetrieval | N/A | MAPv3 | MAPv3 | |

History of changes

MAP Inter Operator SMS Enhancement

TADIG code: PANCL

Section ID: 12 (Optional)

Effective date of change: 2011-07-29

| Inter - Operator SMS Enhancement | | | | |
|-----------------------------------------|---------------------------|-------------------|------------|-----------------|
| Application context name | Current version in | | | Comments |
| | SMS - IWMSC | SMS - GMSC | HLR | |
| shortMsgGateway | N/A | MAPv2 | MAPv2 | |
| shortMsgAlert | MAPv2 | N/A | MAPv2 | |

History of changes

NETWORK ELEMENTS INFORMATION

TADIG code: PANCL

Section ID: 13 (Optional)

Effective date of change: 2022-03-02

| Node type | Node ID | GT address / Address range | IP address / Address range | IPv6 address / Address range | Vendor info | SW / HW version | UTC offset |
|---------------|----------------|----------------------------|----------------------------|------------------------------|----------------------------------------------------------|------------------------|-------------------|
| MSC/VLR-2G+3G | MSS01PAN | 507 62090007 | | | Huawei MSOFTX3000 V200R008C03SPH236 | | -05:00 |
| SCP | IN01PAN | 507 62090038 | | | TECNOMEN Version: PP4.10.3 / CGW 4.10.3 | | -05:00 |
| SMSC | SMSCGT | 507 62090000 | | | SMSC Next Generation Trinode SMSC 5.1 LogicaCMG | | -05:00 |
| SMSC | SMSCGTMT | 507 62090028 | | | SMSC Next Generation Trinode SMSC 5.1 LogicaCMG | | -05:00 |
| SGSN-2G+3G | PAN-USN-01 | 507 62090036 | 181.179.1.0/27 | | Huawei | USN9810 V900R011C01 | +00:00 |
| SGSN-2G+3G | DAV-USN-01 | 507 62090037 | 181.179.1.0/27 | | Huawei | USN9810 V900R011C01 | +00:00 |
| HLR | HLR01PAN | 507 62090034 | | | Huawei | V900R006C06S | PC5300 |
| HLR | HLR01PAN | 507 62090035 | | | Huawei | V900R006C06S | PC5300 |
| MSC/VLR-2G+3G | MSS02PAN | 507 62090004 | | | Huawei | | -05:00 |
| SGW | | | 181.179.1.0/27 | | HUAWEI | | +00:00 |
| SMSC | SMSCGT | 507 62090092 | | | SMSC Next Generation Trinode SMSC 5.1 LogicaCMG | | -05:00 |
| PGW | PA_PAN1_CGW01 | | 201.131.148.128/28 | | Huawei | V100R019C10S | PC5200 |
| PGW | PAN-UGW-01 | | 201.131.149.32/28 | | Huawei | V900R017C10S | PC5100 |
| PGW | PGWU-01-CCN-PA | | 201.131.149.2/32 | | Affirmed Networks | 9.3.0.2-67.REL | +00:00 |
| PGW | PGWU-01-CCN-PA | | 201.131.149.3/32 | | Affirmed Networks | 9.3.0.2-67.REL | +00:00 |
| MSC/VLR-2G+3G | | 507 62090051 | | | | | +00:00 |
| MSC/VLR-2G+3G | | 507 62090052 | | | | | +00:00 |

History of changes

| Date | Description |
|------------|-------------------------------------------------|
| 2022-03-02 | Add VLR |
| 2020-02-14 | New PGW |
| 2019-10-01 | New PGW -C and SPGW |
| 2019-02-06 | New SMSC |
| 2017-06-09 | Delete SGSN 50762000922, Delete MSS 50762090006 |
| 2017-05-23 | Delete MSC/VLR 50762090006 |
| 2016-06-02 | Add SGW |
| 2015-11-24 | New IN GT |
| 2015-05-29 | New MSC MSS02PAN |
| 2014-10-08 | Delete HLR 507 62090001 |
| 2014-03-21 | New HLR |
| 2013-11-19 | New SGSN |
| 2013-11-19 | New SGSN |
| 2013-11-18 | New SGSN |

CAMEL INFO

TADIG code: PANCL

Section ID: 15 (Conditional)

Effective date of change: 2011-07-29

gsmSSF/MSC

| CAP Version supported (Inbound) | CAP Version supported (Outbound) |
|----------------------------------------|-----------------------------------------|
| CAPv2 CAPv3 | CAPv2 CAPv3 |

GPRS SSF SGSN

| CAP Version supported (Inbound) | CAP Version supported (Outbound) |
|----------------------------------------|-----------------------------------------|
| CAPv3 | CAPv3 |

CAPv4 Partial Implementations

| CAMEL Phase 4 CSIs: | Supported (Yes / No) | Planned Date |
|----------------------------|-----------------------------|---------------------|
| MT-SMS-CSI | | |
| MG-CSI | | |
| PSI Enhancements | | |

History of changes

Packet Data Services Information

TADIG code: PANCL

Section ID: 16 (Conditional)

Effective date of change: 2021-06-01

List of APN Operator Identifiers

| APN Operator Identifier | Description | Example |
|-------------------------|-------------|---------|
| mnc003.mcc714.gprs | | |

List of APN's available for testing and troubleshooting**APN WEB List**

| APN Credential | | | APN Type | ISP DNS IP address (primary) | ISP DNS IP address (secondary) |
|------------------|-----------|-----------|----------|------------------------------|--------------------------------|
| APN | Username | Password | | | |
| web.claro.com.pa | anonymous | anonymous | H-APN | | |
| ims.apn | | | H-APN | 216.230.147.90 | 190.184.56.72 |

APN WAP List

| APN Credential | | | APN Type | WAP Gateway IP address | WAP Server URL | WAP Port ver 1 | WAP Port ver 2 |
|------------------|----------|----------|----------|------------------------|---------------------------------------|----------------|----------------|
| APN | Username | Password | | | | | |
| wap.claro.com.pa | CLAROWAP | CLAROWAP | H-APN | 10.240.3.1 | http://www.claro.com.pa/wap/claro.wml | 8799 | |

APN MMS List

| APN | APN Credential | | WAP Gateway IP address for MMS | Messaging Server URL |
|------------------|----------------|----------|--------------------------------|------------------------------|
| | Username | Password | | |
| mms.claro.com.pa | CLAROMMS | CLAROMMS | 10.240.3.129 | http://www.claro.com.pa/mms/ |

IPv6 Connectivity Information

| | IPv6 PDP Supported | IPv4v6 PDP Supported |
|--------------|--------------------|----------------------|
| SGSN Support | Yes | Yes |
| GGSN Support | Yes | Yes |

List of 2G/3G QOS profiles

| | |
|--------------------------------------------|----------------|
| Profile name: | PANCL |
| Traffic class: | Conversational |
| ARP: | 1 |
| Evolved ARP support: | Yes |
| Evolved ARP priority level: | 1 |
| Evolved APR preemption vulnerability list: | |
| Evolved APR preemption capability list: | |

GTP Version

| | |
|------|-------|
| SGSN | GTPv1 |
| GGSN | GTPv1 |

List of Data Service supported

| 2G Data Services | Multislot Class Capability |
|------------------|----------------------------|
| EDGE | |
| GPRS | |

3G Data Services

| 3G Data Services | UE 3G Category |
|------------------|----------------|
| 3GPP | |

Multiple PDP Context Support

| | |
|-------------------------------|---|
| Number of Primary PDP Context | 3 |
|-------------------------------|---|

History of changes

| Date | Description |
|------------|---------------------------------------------------|
| 2021-06-01 | Adding Web APN (IMS for VoLTE only) & Adding IPV6 |

| Date | Description |
|------------|-----------------|
| 2018-08-23 | APN type |
| 2013-11-26 | New SGSN |
| 2013-11-26 | New SGSN |
| 2013-11-18 | New SGSN |
| 2013-08-30 | WAP Port Number |

IP - Roaming and IP - Interworking Information

TADIG code: PANCL

Section ID: 17 (Conditional)

Effective date of change: 2022-01-17

| List of All IP address ranges used by PMN for connection to inter - PMN IP backbone | IP Address Range |
|-------------------------------------------------------------------------------------|--------------------|
| | 181.179.1.0/27 |
| | 166.237.16.192/28 |
| | 201.131.148.128/28 |
| | 201.131.149.32/28 |
| | 201.131.149.0/29 |
| | 216.230.147.240/28 |
| | 200.62.106.192/28 |
| | 181.209.135.32/29 |
| | 190.148.85.240/29 |
| | 200.62.114.224/29 |

| List of Autonomous System Number (ASN): | ASN |
|-----------------------------------------|-------|
| | 64973 |
| | 65514 |
| | 14754 |

| List of Autonomous System Number (ASN4B): | ASN4B |
|-------------------------------------------|-------|
|-------------------------------------------|-------|

| List of PMN authoritative DNS server IP addresses and names | | |
|-------------------------------------------------------------|--------------|------------------------------------|
| IP address | IPv6 address | DNS Name |
| 166.237.16.201 | | panamadns01bhw.mnc003.mcc714.gprs. |
| 166.237.16.202 | | panamadns02bhw.mnc003.mcc714.gprs. |

| List of PMN local caching DNS server IP addresses and names | | |
|-------------------------------------------------------------|--------------|----------------|
| IP address | IPv6 address | DNS Name |
| 181.209.135.37 | | CEN-SVA-CDNS02 |
| 190.148.85.245 | | MET-SVA-CDNS01 |
| 200.62.114.228 | | EST-SVA-CDNS02 |

| IP addresses that respond to ping / traceroute: | 166.237.16.203 |
|-------------------------------------------------|----------------|
| | 181.179.1.1 |
| | 181.179.1.3 |

| List of GRX Providers | GRX Provider |
|-----------------------|--------------|
| | Ibasis |

History of changes

| Date | Description |
|------------|----------------------------------------------|
| 2022-01-17 | Remove DNS servers |
| 2020-07-16 | Add DNS Servers |
| 2020-07-16 | Add IP Backbone |
| 2020-07-15 | Update GRX provider |
| 2020-02-14 | New IP Range |
| 2019-10-01 | New IP Address Range |
| 2019-04-15 | Add ASN |
| 2018-08-23 | GRX provider added |
| 2015-08-19 | ASN Number change |
| 2015-06-01 | ASN change and it appears on Routing section |
| 2015-03-30 | ASN change and it appears on Routing section |
| 2015-01-07 | ASN4B Change |
| 2014-11-27 | New ASN |

| Date | Description |
|------------|---------------------|
| 2014-11-27 | PMN IP Backbone |
| 2014-09-23 | Delete IP Backbone |
| 2014-04-24 | New SGSN and GGSN |
| 2014-03-25 | DNS Name |
| 2014-01-17 | New PMN IP Backbone |
| 2013-06-20 | New PMN IP Backbone |

LTE Roaming Information

TADIG code: PANCL

Section ID: 20 (Optional)

Effective date of change: 2021-06-01

| IPX Provider Name | IPX DA Realm Used | Diameter Architecture |
|-------------------|-------------------|-----------------------|
| Ibasis | | |

| Primary IP address of DA | Secondary IP address of DA |
|--------------------------|----------------------------|
|--------------------------|----------------------------|

Roaming Interconnection

| EPC Realms For Roaming | |
|------------------------|-----------------------------------|
| | epc.mnc003.mcc714.3gppnetwork.org |

FQDN Diameter Edge Agent

| FQDN | Primary IP Address DEA FQDN | Secondary IP Address DEA FQDN |
|-------------------------------------------|--------------------------------|----------------------------------|
| DRA01PAN.mnc003.mcc714.3gppnetwork.org | 181.179.1.220 | 181.179.1.221 |
| DRA01DAV.mnc003.mcc714.3gppnetwork.org | 181.179.1.228 | 181.179.1.229 |
| gidra01.epc.mnc001.mcc704.3gppnetwork.org | 186.151.46.210 | 186.151.46.218 |
| gidra01.ims.mnc001.mcc704.3gppnetwork.org | 186.151.46.211 | 186.151.46.219 |
| padra01.epc.mnc003.mcc714.3gppnetwork.org | 201.131.150.76 | 201.131.150.84 |
| padra01.ims.mnc003.mcc714.3gppnetwork.org | 201.131.150.77 | 201.131.150.85 |

| S6a Supported without IWF | S6a MAP IWF supported to HSS | S6a MAP IWF supported to MME |
|---------------------------|------------------------------|------------------------------|
| true | false | false |

| S6d used for legacy SGSN | S9 used for PCC |
|--------------------------|-----------------|
| false | false |

SMS ITW

| SMS delivery over IP | SMS over NAS (SGs) via SS7 | SMS over NAS (SGd) via Diameter |
|----------------------|----------------------------|---------------------------------|
| false | true | false |

Voice ITW

CSFB

Roaming CS Fallback

Not Supported

| | | HPMN | VPMM |
|------------------------------|----------------------------|------|------|
| LTE Roaming Agreement Only | LTE Only Roaming Supported | No | Yes |
| 2G/3G Roaming Agreement Only | Scenario 2 Supported | Yes | Yes |
| | Scenario 3 Supported | Yes | Yes |
| 2G/3G/LTE Roaming Agreement | Scenario 1 Supported | Yes | Yes |
| | Scenario 2 Supported | Yes | Yes |
| | Scenario 3 Supported | No | No |
| | Scenario 4 Supported | No | No |
| | Scenario 5 Supported | No | No |
| | Scenario 6 Supported | No | No |

List of LTE QoS profiles

| Profile name: | LTE QoS_75M_75M |
|------------------------------------|--------------------------------|
| QCI Value List: | 9 |
| QOS ARP List: | 1 |
| ARP Preemption Vulnerability List: | 1 |
| ARP Preemption Capability List: | 1 |
| Profile name: | Supported QCI for IMS Services |
| QCI Value List: | 1 |
| | 2 |
| | 5 |
| QOS ARP List: | 1 |
| | 5 |
| | 8 |
| ARP Preemption Vulnerability List: | 0 |
| ARP Preemption Capability List: | 1 |

| IPv6 Connectivity Information | | |
|-------------------------------|--------------------|----------------------|
| | IPv6 PDP Supported | IPv4v6 PDP Supported |
| MME Support | Yes | Yes |
| SGW Support | Yes | Yes |
| PGW Support | Yes | Yes |

Information for Diameter certificates exchange

| 5G early drop support | | |
|---------------------------------------------------------------------|---------|---------|
| | As HPMN | AS VPMN |
| 5G NSA (non-standalone access) supported | No | No |
| DNS PGW NAPTR includes +nc-nr | No | No |
| NSA options for EN-DC | | |
| ARD set to support of NR as secondary RAT | No | |
| Restrict NR access if HSS is not set to support NR as secondary RAT | | No |

History of changes

| Date | Description |
|------------|------------------------------------------------------------------------------|
| 2021-06-01 | Adding VoLTE information (IMS, QoS Profile, Vdras) & Adding IPV6 information |
| 2020-07-15 | Update IPX provider |
| 2018-08-23 | EPC Realms |
| 2018-08-23 | EPC Realms |
| 2018-08-23 | IPX provider |
| 2016-06-06 | LTE Roaming Information |

VoLTE Roaming Information Section

TADIG code: PANCL

Section ID: 26 (Conditional)

Effective date of change: 2021-06-01

| VoLTE roaming architectures | | |
|-----------------------------|-----------|-----------|
| Architecture | VPMN | HPMN |
| S8HR | Supported | Supported |

| Mobility and voice continuity | | |
|------------------------------------|---------------|---------------|
| Technology | VPMN | HPMN |
| Single Radio Voice Call Continuity | Not supported | Not supported |

| S8HR roaming constraints | |
|----------------------------------|--------------------------------|
| VPLMN technology Strategy for EC | CS Fallback |
| Lawful Interception | Yes |
| EPS QoS to be enforced | Supported QCI for IMS Services |

| Local emergency numbers in use at the VPMN | | | |
|--------------------------------------------|-----------|-----------------|----------|
| Number | Service | URN information | Validity |
| 911 | Emergency | | |
| 104 | Emergency | | |

History of changes

| Date | Description |
|------------|----------------------|
| 2021-06-01 | Adding VoLTE Section |

CONTACT INFORMATION

TADIG code: PANCL

Section ID: 21 (Optional, Repeating)

Effective date of change: 2021-06-01

List of Roaming Troubleshooting Contact Information**Roaming Troubleshooting Contact Information**

| | | | |
|--------------------------------|---------------------|-------------------|-----------------|
| Location | Panama | | |
| Office Time Zone in UTC | -05:00 | | |
| Office Hours | Week Day (s) | Start Time | End Time |
| | Mon Tue Wed Thu Fri | 08:00:00 | 18:00:00 |

Main Contact for Troubleshooting (Office Hours)

| Team Name | Tel. | Mobile | Fax | Email |
|-----------|------|--------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| IR Team | | | | brithania.aguilar@claro.com.pa rafael.espinosa@claro.com.pa olga.garcia@claro.com.gt nocpanama@claro.com.pa nocroaming.cenam@claro.com.gt |

Escalation Contact for Troubleshooting

| Person Name | Tel. | Mobile | Fax | Email |
|-------------|-------------|-------------|-----|--------------------------|
| Olga García | 50224206963 | 50258261515 | | olga.garcia@claro.com.gt |

24 x 7 Troubleshooting (contact out of Office Hours)

| Team Name | Tel. | Mobile | Fax | Email |
|-----------|------|--------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| IR Team | | | | brithania.aguilar@claro.com.pa rafael.espinosa@claro.com.pa olga.garcia@claro.com.gt nocpanama@claro.com.pa nocroaming.cenam@claro.com.gt |

Roaming Troubleshooting Ticketing System Information

Ticket system web address

Ticket system email address

Additional Contacts**SCCP Inquires and ordering of SS7 Routes**

| Person Name | Tel. | Mobile | Fax |
|----------------------|--------------------------------|-------------|-----|
| Ms Brithania Aguilar | 5072169773 | 50762553430 | |
| JobTitle | Email | | |
| Roaming Analyst | brithania.aguilar@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Rafael Espinosa | 5072169774 | | |
| JobTitle | Email | | |
| Roaming Analyst | rafael.espinosa@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Olga García | 50224206963 | 50258261515 | |
| JobTitle | Email | | |
| Roaming Specialist | olga.garcia@claro.com.gt | | |
| Person Name | Tel. | Mobile | Fax |
| NOC Panama | | | |
| JobTitle | Email | | |
| | nocpanama@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| NOC Roaming | | 50258260388 | |
| JobTitle | Email | | |
| | nocroaming.cenam@claro.com.gt | | |

Roaming Coordinator

| Person Name | Tel. | Mobile | Fax |
|---------------------|--------------------------|-------------|-----|
| Elid De Leon | 50224206961 | 50254824040 | |
| JobTitle | Email | | |
| Roaming Coordinator | elid.deleon@claro.com.gt | | |

IREG Tests

| Person Name | Tel. | Mobile | Fax |
|----------------------|--------------------------------|-------------|-----|
| Rafael Espinosa | 5072169774 | | |
| JobTitle | Email | | |
| Roaming Analyst | rafael.espinosa@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Ms Brithania Aguilar | 5072169773 | 50762553430 | |
| JobTitle | Email | | |
| Roaming Analyst | brithania.aguilar@claro.com.pa | | |

TADIG Tests

| Person Name | Tel. | Mobile | Fax |
|----------------------|--------------------------------|-------------|-----|
| Rafael Espinosa | 5072169774 | | |
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| Roaming Analyst | rafael.espinosa@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Ms Brithania Aguilar | 5072169773 | 50762553430 | |
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| Roaming Analyst | brithania.aguilar@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Alex Corado | 50224205746 | | |
| JobTitle | Email | | |
| Roaming Specialist | alex.corado@claro.com.gt | | |

CAMEL Tests

| Person Name | Tel. | Mobile | Fax |
|----------------------|--------------------------------|-------------|-----|
| Ms Brithania Aguilar | 5072169773 | 50762553430 | |
| JobTitle | Email | | |
| Roaming Analyst | brithania.aguilar@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Rafael Espinosa | 5072169774 | | |
| JobTitle | Email | | |
| Roaming Analyst | rafael.espinosa@claro.com.pa | | |

GPRS Tests

| Person Name | Tel. | Mobile | Fax |
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| Ms Brithania Aguilar | 5072169773 | 50762553430 | |
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| Roaming Analyst | brithania.aguilar@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Rafael Espinosa | 5072169774 | | |
| JobTitle | Email | | |
| Roaming Analyst | rafael.espinosa@claro.com.pa | | |

Contact Person(s) in PMN for GRX connectivity

| Person Name | Tel. | Mobile | Fax |
|----------------------|--------------------------------|-------------|-----|
| Ms Brithania Aguilar | 5072169773 | 50762553430 | |
| JobTitle | Email | | |
| Roaming Analyst | brithania.aguilar@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Rafael Espinosa | 5072169774 | | |
| JobTitle | Email | | |
| Roaming Analyst | rafael.espinosa@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Olga García | 50224206963 | 50258261515 | |
| JobTitle | Email | | |
| Roaming Specialist | olga.garcia@claro.com.gt | | |

Contact Person(s) in PMN for GRX Provider

| Person Name | Tel. | Mobile | Fax |
|----------------------|--------------------------------|-------------|-----|
| Olga García | 50224206963 | 50258261515 | |
| JobTitle | Email | | |
| Roaming Specialist | olga.garcia@claro.com.gt | | |
| Person Name | Tel. | Mobile | Fax |
| Ms Brithania Aguilar | 5072169773 | 50762553430 | |
| JobTitle | Email | | |
| Roaming Analyst | brithania.aguilar@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Rafael Espinosa | 5072169774 | | |
| JobTitle | Email | | |
| Roaming Analyst | rafael.espinosa@claro.com.pa | | |

Contact Person(s) for WLAN

| Person Name | Tel. | Mobile | Fax |
|----------------------|--------------------------------|-------------|-----|
| Ms Brithania Aguilar | 5072169773 | 50762553430 | |
| JobTitle | Email | | |
| Roaming Analyst | brithania.aguilar@claro.com.pa | | |
| Person Name | Tel. | Mobile | Fax |
| Rafael Espinosa | 5072169774 | | |
| JobTitle | Email | | |

| | | | |
|--------------------|-------------|------------------------------|------------|
| Roaming Analyst | | rafael.espinosa@claro.com.pa | |
| Person Name | Tel. | Mobile | Fax |
| Olga García | 50224206963 | 50258261515 | |
| JobTitle | | Email | |
| Roaming Specialist | | olga.garcia@claro.com.gt | |

| Other contact(s) | | | | |
|------------------|-------------|------|-------------------------------|-----|
| | Person Name | Tel. | Mobile | Fax |
| | NOC Roaming | | 50258260388 | |
| | JobTitle | | Email | |
| | | | nocroaming.cenam@claro.com.gt | |

| | |
|----------------------------------------|--------------------------------|
| IR21 Distribution Email Address | Email |
| | brithania.aguilar@claro.com.pa |
| | olga.garcia@claro.com.gt |
| | rafael.espinosa@claro.com.pa |

History of changes

| Date | Description |
|------------|------------------------------|
| 2021-06-01 | Updated Contact Information |
| 2020-06-26 | Contact List |
| 2020-06-26 | Contact List |
| 2018-08-23 | Contact List Changes |
| 2016-06-02 | Contact list change |
| 2016-02-10 | Changes in contacts |
| 2013-05-22 | Troubleshooting Contact List |
| 2013-05-22 | Contact List |
| 2013-05-22 | Contact List |
| 2013-05-22 | Office Hours |
| 2013-05-22 | Contact list |
| 2013-05-22 | Contact list |
| 2013-05-22 | E-mails Address |
| 2013-05-22 | Contact List |
| 2013-05-22 | CONTACT LIST |
| 2013-05-22 | PANCLIR21 |
| 2012-12-03 | IR.21 Distribution List |
| 2012-11-30 | Contacts |

SECTIONS NOT IN USE

| TADIG Code | Section ID | Section Name |
|------------|------------|-----------------------------------------------------------------------------|
| PANCL | 6 | Domestic SCCP Gateway |
| PANCL | 7 | SCCP Protocol available at PMN for connection for International SS7 Roaming |
| PANCL | 9 | Test Numbers Information |
| PANCL | 14 | USSD Information |
| PANCL | 18 | MMS Interworking Information |
| PANCL | 19 | WLAN Information |
| PANCL | 22 | Hosted Networks |
| PANCL | 23 | M2M Roaming Information |
| PANCL | 24 | MVNO Information |
| PANCL | 27 | LPWA Roaming Information Section |