



WRIX-d UDR to TAP mapping

Version 1.0

04 June 2014

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1 Introduction

1.1 Overview

Wi-Fi Home Service Providers (HSPs) and Visited Network Providers (VNP) can use two different wholesale billing formats (WRIX-d UDR and TAP). Operators using TAP require the ability to roam with partners who use WRIX-d UDR and vice versa.

This document describes high-level what needs to be considered for the conversion from WRIX-d UDR to TAP. It is assumed that TAP will be exchanged over the public interface.

1.2 Scope

The scope of this PRD is to provide mapping instructions as help for companies converting WRIX-d UDR into TAP.

1.3 Abbreviations

Term	Description
BID	Billing IDentifier
CAMEL	Customised Application Mobile Enhanced Logic
GPRS	General Packet Radio Service
GSM	Global System for Mobile communications (originally Groupe Spécial Mobile)
GSMA	GSM Association
HSP	Home Service Provider
IMEI	International Mobile station Equipment Identity
IMSI	International Mobile Subscriber Identity
kB	Kilobytes
MCC	Mobile Country Code
MNC	Mobile Network Code
MSISDN	Mobile Station International Subscriber Directory Number
NI	Network Identification
OI	Operator Identification
PDP	Packet Data
PRD	Permanent Reference Document
RAP	Returned Account Procedures
SDR	Special Drawing Right
TAP	Transferred Account Procedure
TD	Test Data
TU	Test Usage
UD	Usage Data
UDR	Usage Data Record
UTC	Universal Time Co-ordinated
VNP	Visited Network Provider

Term	Description
WRIX-d	Wireless Roaming Intermediary eXchange – data clearing

1.4 References

Ref	Doc Number	Title
[1]	GSMA PRD BA.11	Treatment of exchange rates for billing and payment
[2]	GSMA PRD TD.57	TAP3 Format Specification

2 WRIX-d UDR to TAP Mapping

This section contains details of how to map each field from WRIX-d UDR into TAP.

It is assumed that a WRIX-d UDR file will always contain at least one body record.

WRIX-d UDR field	TAP field	Comments
	Batch Control Information	Create group
VNP (header)	Sender	Convert the VNP Operator Id into the Sender TADIG code using a mapping table
HSP (body)	Recipient	Convert the HSP Operator Id into Recipient TADIG Code using a mapping table
SequenceNumber (header)	File Sequence Number	Copy across. Note: WRIX-d UDR is being changed to have 5 digits in the SequenceNumber from previous 6. If the SequenceNumber contains 6 digits, then the first digit should be dropped.
FileCreationTimestamp (header)	File Creation Timestamp	Doesn't need to be created
	UTC Time Offset	Only create if there is a File Creation Timestamp
FileCreationTimestamp (header) BillingMonth (header)	Transfer Cut Off Timestamp	Set to earliest of FileCreationTimestamp or last day of the billing month (take the YYYYMM from the BillingMonth, then add the last day of that month for DD and 235959 for the hhmmss)
	UTC Time Offset	Set to +0000
FileCreationTimestamp (header)	File Available Timestamp	Set to current time when the TAP file is created
	UTC Time Offset	Set to time zone in line with the File Available Timestamp
	Specification Version Number	Set to 3
	Release Version Number	Set to latest Release Version Number (currently 12)
[Prefix of file name]	File Type Indicator	If prefix = UD, don't create and set file prefix to CD If prefix = TU, set to T and set file prefix to TD

WRIX-d UDR field	TAP field	Comments
	RAP File Sequence Number	Don't create
	Operator Specific Information	Optional
	Accounting Information	Create group
	Taxation	Create group
	Tax Rate Code	Set to 0. Use 0 in all call records.
	Tax Type	Set for example to 01 (national). Note: This is an assumption as WRIX-d UDR does not contain any details on the tax type.
	Tax Rate	Don't create
	Charge Type	Don't create
	Tax Indicator	Don't create
	Discounting	Don't create
Currency (header)	Local Currency	Copy across. Also use to convert all charge fields from Local Currency in WRIX-d UDR to SDR (or other TAP Currency as agreed).
	TAP Currency	Will only be used if the TAP Currency is other than SDR
	Currency Conversion	Create group
	Exchange Rate Code	Create for each individual call record that has a unique exchange rate
	Number of Decimal Places	Set to 6
	Exchange Rate	Create for each call record that has a unique exchange rate according to the BA.11 [1] rules, including pegging and re-pegging due to fluctuations. Use to convert all charge fields from Local Currency to TAP Currency (SDR or other currency as agreed).
	TAP Decimal Places	Set to 4
	Network Information	Create group

WRIX-d UDR field	TAP field	Comments
	UTC Time Offset Information	Create group
	UTC Time Offset Code	Set to 0
	UTC Time Offset	Set to +0000
	Recording Entity Information	Create group
	Recording Entity Code	Create for each call record that has a unique recording entity
	Recording Entity Type	Set to 6
LocationName (body)	Recording Entity Identification	Copy across
	Message Description Information	Don't create
	Call Event Details	Repeat once for each WRIX-d UDR body record
	GPRS Call	Create group
	GPRS Basic Call Information	Create group
	GPRS Chargeable Subscriber	Create group
	Chargeable Subscriber	Create group
	IMSI	Set to HSP's MCC/MNC. If the HSP does not have a MCC/MNC, set to default 000000 or alternatively bilaterally agreed value between 6 and 16 digits.
	MSISDN	Doesn't need to be created.
	PDP Address	Don't create
UserName (body)	Network Access Identifier	Copy across
	RAP File Sequence Number	Don't create
	GPRS Destination	Create group
VenueClass (body)	Access Point Name NI	Copy across
	Access Point Name OI	Don't create
CallEventTimestamp (body)	Call Event Start Timestamp	Copy across

WRIX-d UDR field	TAP field	Comments
	UTC Time Offset Code	Set to 0
UsedDuration (body)	Total Call Event Duration	Copy across
CauseForTermination (body)	Cause For Termination	Copy across
	Partial Type Indicator	Don't create
	PDP Context Start Timestamp	Don't create
	UTC Time Offset Code	Don't create
	Network Init PDP Context	Don't create
	Charging Id	Set to 0
	GPRS Location Information	Create group
	GPRS Network Location	Create group
	Recording Entity Code	Correlate with Network Information
	Location Area Code	Don't create
	Cell Identity	Don't create
	Home Location Information	Don't create
	Home BID	Don't create
	Home Location Description	Don't create
	Geographical Location	Create group
	Serving Network	Don't create
	Serving BID	Don't create
LocationName (body)	Serving Location Description	Copy across
	Equipment Identifier	Don't create
	IMEI	Don't create
	GPRS Service Used	Create group
	IMS Signalling Context	Don't create

WRIX-d UDR field	TAP field	Comments
UsedVolumeDownLink (body)	Data Volume Incoming	Convert by multiplying with 1024 (converting kB into octets).
UsedVolumeUpLink (body)	Data Volume Outgoing	Convert by multiplying with 1024 (converting kB into octets).
	Charge Information	Create one occurrence of the group per Charged Item.
	Charged Item	If ChargedDurationAmount is non zero, then create a Charged Item = D. If ChargedVolumeAmount is non zero, then create a Charged Item = X. If SessionAmount is non zero, then create a Charged Item = F.
	Exchange Rate Code	Correlate with Accounting Information to find the exchange rate used for the session
	Call Type Group	Create group
	Call Type Level 1	Set to 100
	Call Type Level 2	Set to 0
	Call Type Level 3	Set to 0
	Charge Detail	Create group
	Charge Type	Set to 00
ChargedDurationAmount (body) ChargedVolumeAmount (body) SessionAmount (body)	Charge	Depending on the Charged Item convert from float using TAP Decimal Places from: D: ChargedDurationAmount X: ChargedVolumeAmount F: SessionAmount
	Chargeable Units	If Charged Item = D, then copy from Total Call Event Duration. If Charged Item = X then copy from the sum of Data Volume Incoming and Data Volume Outgoing. If Charged Item = F then don't create.
ChargedDuration (body) ChargedVolume (body)	Charged Units	If Charged Item = D, then copy from ChargedDuration. If Charged Item = X then convert from the ChargedVolume multiplied by 1024 (converting kB into octets). If Charged Item = F then don't create.

WRIX-d UDR field	TAP field	Comments
	Charge Detail Timestamp	Don't create
	UTC Time Offset Code	Don't create
	Tax Information	Create group.
	Tax Rate Code	Set to 0
TaxAmount (body)	Tax Value	Convert from float using TAP Decimal Places
	Taxable Amount	Don't create
	Discount Information	Don't create
	CAMEL Service Used	Don't create
ChargeableUserID (body)	Operator Specific Information	Create with keyword "ChargeableUserID:" followed by the ChargeableUserID copied from the UDR file.
AccountingSessionID (body)	Operator Specific Information	Create with keyword "AccountingSessionID:" followed by the AccountingSessionID copied from the UDR file.
	Audit Control Information	Create group
	Earliest Call Timestamp	Find out the earliest call timestamp from the file. Does not need to be created.
	UTC Time Offset	Set to +0000 if Earliest Call Timestamp created
	Latest Call Timestamp	Find out the latest call timestamp from the file. Does not need to be created.
	UTC Time Offset	Set to +0000 if Latest Call Timestamp created
	Total Charge	Sum up all Charge fields in the created TAP file
	Total Charge Refund	Don't create
	Total Tax Refund	Don't create
	Total Tax Value	Sum up all Tax Value fields in the created TAP file
	Total Discount Value	Set to 0
	Total Discount Refund	Don't create

WRIX-d UDR field	TAP field	Comments
	Total Advised Charge Value	Don't create
	Call Event Details Count	Calculate from the number of GPRS Call records in the created TAP file
	Operator Specific Information	Optional

Table 1: WRIX-d UDR to TAP Mapping

3 WRIX-d UDR Fields not Used in the Mapping

WRIX-d UDR field	Comments
Version (header)	Not needed as the TAP version is independent from the WRIX-d UDR version
DeviceId (body)	No equivalent in TAP, and not needed for charging
TotalNumberOfSessions (trailer)	Not needed as all totals are calculated from the TAP file
TotalUsedDuration (trailer)	Not needed as all totals are calculated from the TAP file
TotalUsedVolumeDownLink (trailer)	Not needed as all totals are calculated from the TAP file
TotalUsedVolumeUpLink (trailer)	Not needed as all totals are calculated from the TAP file
TotalChargedDurationAmount (trailer)	Not needed as all totals are calculated from the TAP file
TotalChargedDuration (trailer)	Not needed as all totals are calculated from the TAP file
TotalChargedVolumeAmount (trailer)	Not needed as all totals are calculated from the TAP file
TotalChargedVolume (trailer)	Not needed as all totals are calculated from the TAP file
TotalSessionAmount (trailer)	Not needed as all totals are calculated from the TAP file
TotalTaxAmount (trailer)	Not needed as all totals are calculated from the TAP file

Table 2: WRIX-d UDR Fields not Used in the Mapping

4 TAP Versions

The mapping instructions have assumed that either of the two latest major TAP versions are used, TAP3.11 and TAP3.12 as defined in TD.57 [2]. The mapping instructions are the same for both TAP3.11 and TAP3.12 with the exception of the Release Version element.

Annex A Document Management

A.1 Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0	4 Jun 2014	New PRD TD.109	TADIG #77 PSMC	Christer Gullstrand / Syniverse

A.2 Other Information

Type	Description
Document Owner	TADIG
Editor / Company	Christer Gullstrand / Syniverse

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