

## Overview

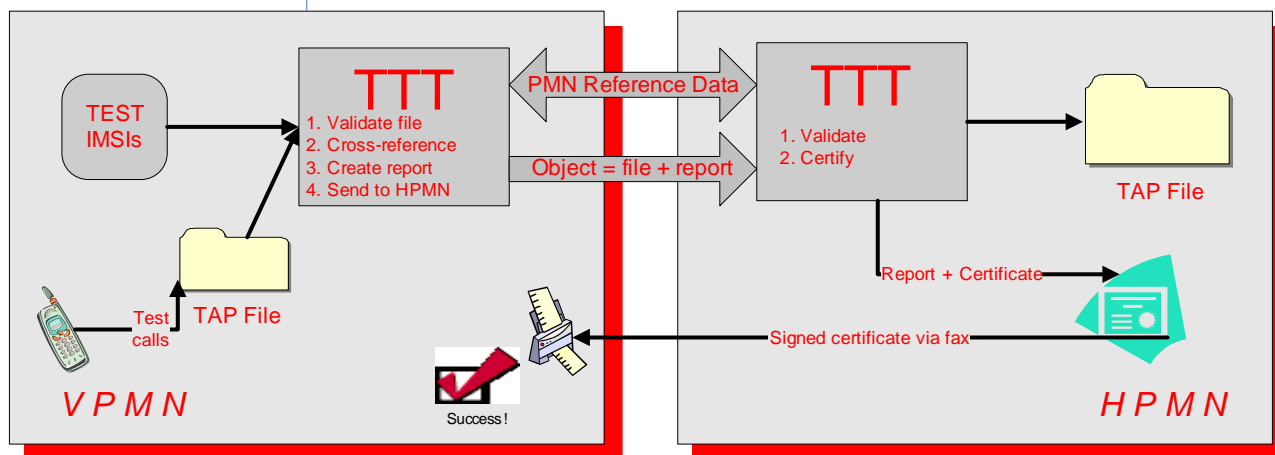
*In* today's competitive wireless marketplace, a seamless service offering and accurate billing is the key to a company's success. Maintaining market share depends on providing new services to your subscribers – anywhere, both at home and while travelling.

The **GSM Association (GSMA)** has worked closely with its membership to develop standards for the interfaces needed to provide and bill for these services. TADIG (Transferred Account Data Interchange Group) is the **GSMA** Working Group responsible for billing processes. TADIG prepares the permanent reference documents (PRDs) that define billing and testing standards, which are used for billing record exchanges between companies.

The TADIG billing process uses two formats: Transferred Account Procedures (TAP), the **GSMA** standard for roaming call events, and Returned Account Procedure (RAP), the **GSMA** standard for rejecting and returning invalid call events. TAP and RAP files facilitate inter-company settlements and bill presentation of all call activity.

## TADIG testing process

**GSMA** recommends the TADIG testing process be used with each partner for every new, or updated, agreement, service or billing system. The TAP Testing Toolkit (TTT) is designed to aid companies with this test process. Network tests are performed ("services are provisioned on a 'visited' network"). Billing files are created and validated in the TTT by the Visited Operator (VPMN). Call events are cross-referenced to test cases and results are sent to the Home Operator (HPMN). The HPMN re-validates files in the TTT ensuring that commercial files will be successfully received by the HPMN. The HPMN can then certify the results using TTT reports. See this diagram for a typical test flow.



## TTT Benefits

### Automated Testing Processes

*Many* companies have more than 150 agreements. The TTT provides key features (such as 'cloning') saving time for companies that must test or re-test with many of their partners in a short period. Additionally, TTT automates the processes for validations, cross-referencing and exchanges of test files. With TTT, a company can ensure their TAP and RAP compliance easily and effectively.

### Consistent Standards Interpretations

*TAP* and RAP are complex standards and different interpretations can result in billing records to be rejected or delayed by partner companies. Using TTT, all participants are sure their TAP processes comply with industry standards avoiding record or file rejection.

### Avoid Loss of Revenue

*Without* proper testing there is a risk that TAP files may contain undetected errors. Revenue losses may occur directly if services are not charged correctly to subscribers, or indirectly through disputes resulting in aged, un-billable data.

# TAP Testing Toolkit



## Faster 'Time to Market'

*With* TTT, companies can launch more agreements in a shorter timeframe allowing them to offer wider and more consistent service.

## Key Functionality Points

**TAP file validation** – Performs validation on TAP files based on the appropriate TADIG PRD and bi-laterally agreed configuration (**Note:** TTT allows the user to turn on and off some basic TAP3 validations as bi-laterally agreed in roaming agreements)

**File viewer** – Allows the tester to easily view the details of any file (up to 200 Mb in size) in any format (TAP1, TAP2, NA TAP2, TAP2+, TAP3 or RAP)

**Filtering events** – Allows users to search for specific test cases using flexible search criteria (IMSI, service, APN, call date, time / call type and others) to make the process easy and fast.

**Cross-referencing** – Facilitates mapping of specific call events to exact TADIG specifications, and for TADIG test cases, the user can use 'point and click' to associate a test case with a call event.

**Object creation** – Creates 'objects', containing the TAP file, applicable cross-references, roaming agreement data and report – into one package sent via email to the HPMN. This information can be easily retrieved and certified.

**Reporting** – Generates reports in a standardised (or customised) format for easy accessibility. Reports are stored in an .rft file format for partner retrieval and viewing. Companies can match their needs with customised reports.

**Cloning** – Allows the copying of specific files for submission to additional HPMN partners as required. Confidential information (such as subscriber identifiers) is updated *prior* to file copy. This feature is valuable when billing systems are upgraded.

**Test Management** – Enables operators to efficiently manage the planning and scheduling of tests with each roaming partner.

## System Requirements

*The* system requirements for running the TTT are listed in this table:

Item	Requirement
Processor	Pentium, 166 MHz or greater
RAM	32 Mb minimum
Disk space	20 Mb plus the TAP file space
Operating system	Windows™ 95, 98, 2000, NT, ME, XP
Screen resolution	1024 X 768 recommended

## TTT Software

**GSMA** members or associate members can receive TTT software in a downloadable format. A CD-ROM is available for non-members.

## Information

If you wish additional information on **GSMA** TTT, please contact: [tttcoord@gsm.org](mailto:tttcoord@gsm.org).

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## Orders

To order the **GSMA** TTT software, complete and remit the [TTT Order Form](#) included in this package.

## Other Information

TTT software was developed on behalf of the GSM Association as a joint venture between Comfone Ltd and INFOBRAIN, Ltd.

TTT versions 3.11.0, 3.10.2, and 3.10.1 were developed on behalf of the GSM Association by INFOBRAIN Ltd.