



Billing Testing

Money makes the world go round – what happens if your network rating and billing is not correct?

For all network operators validation of billing is of major importance. Operators must provide fair and accurate billing to the customer and also avoid revenue leakage or overcharges caused by services being incorrectly rated and invoiced. In most countries accuracy of metering and billing is mandatory to comply with legal regulations.

As markets have become increasingly competitive, operators have used innovative tariffs, product and service bundles and discounts to differentiate themselves. Complex and fast changing tariffs inevitably create challenges in ensuring correct billing.

Testing that is both end-to-end and independent can provide the assurance that the customers are being correctly billed as well as satisfying compliance requirements.

Today, manual tests not only provide inaccurate, untrustworthy but in most cases cost inefficient testing. To ensure correct billing, a precise and reliable **Revenue Assurance** system is essential. With a SITE test system, continuous testing of all services provides maximum assurance that all calls are being correctly billed as each network element can be tested and verified.



Ensure correct billing, for you and your customers

How to guarantee correct billing?

Three billing testing concepts are highlighted:

- Test Call/Event Generation
- CDR Testing
- Tariff Testing

Test Call/Event Generation

Test call and event generation can be as basic as creating network events by generating calls to test the correct function of a network or its subsystems.

SITE is ideally suited as a Test Call/Event Generator for Revenue Assurance projects generating its CDRs to be referenced with the network's 'live' CDRs.

Operators need to recognize the value of more than just test call generation; you need to be able to store CDRs to perform verification and detection for errors AUTOMATICALLY.

- New product pre-launch testing – can we bill accurately and reliably for the product?
- Testing of correct function after product updates – does the mediation system still summarize all CDRs correctly?
- Testing of software patching on switches and other infrastructure – are we still producing correct CDRs for all call classes?
- Testing new infrastructure during and after roll out, e.g. new base stations.
- Testing of roaming tariff updates – are roamers, still being billed?



CDR Testing

Timely detection of revenue leakages

You want a solution which compares CDRs generated by network nodes like the MSC or SGSN in a highly automated way and sends alarms mismatches.

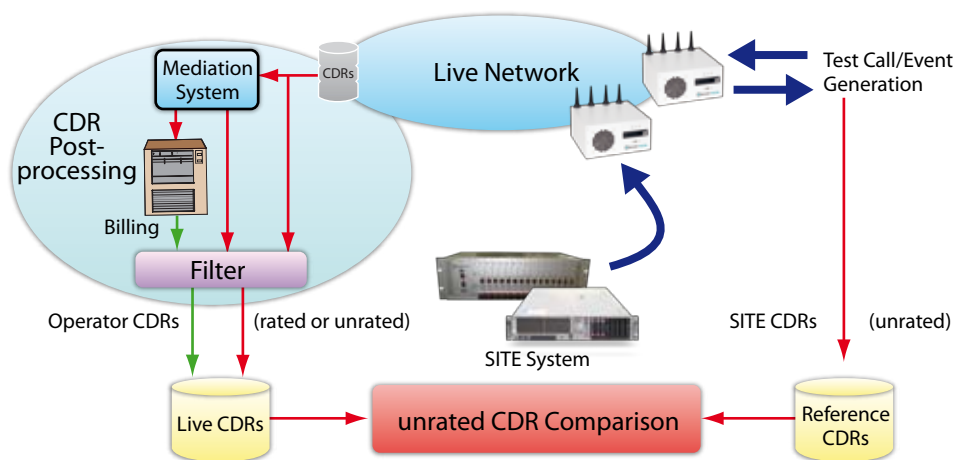
SITE acts as a Test Call/Event Generator, it is capable of importing 'live' CDRs from the network and comparing them with the reference CDRs generated by SITE.

The 'live' CDRs of the generated test calls are extracted at a chosen point in post-processing for automated comparison by the test system.

CDRs can be verified and erroneous CDR fields such as faulty time stamps and call duration can be detected.

CDR Structure

- Record Type: e.g. TimeBased, VolumeBased, EventBased
- Service Type: e.g. SPEECH, FAX, GPRS
- Begin of event: timestamp in milliseconds
- A Number
- B Number
- Call Duration (Time based calls)
- Data Volume (Volume based calls)
- Event Count (Event based calls)



Ensure correct billing,
for you and your
customers

Are Core Network nodes like MSC or SGSN generating the right CDR data? Deploy a test event generator which generates CDRs that you can compare with your network CDRs.



Tariff Testing

Proactively monitor tariff plans against variety of test cases

You want a solution which not only compares CDRs but also detects billing errors before they turn into customer complaints or revenue losses.

Rating

At the heart of the billing system is the rating engine. This takes the CDRs (call detail records) or IPDRs (internet protocol detail records) from the network, and then applies the appropriate rating plans to turn this information into rated CDRs ready to be associated with the customer.

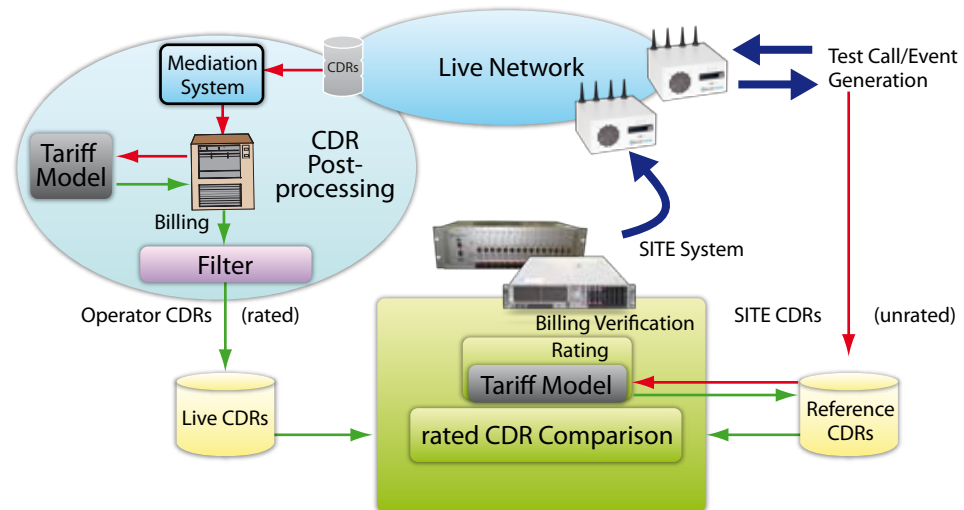
Billing

Once a CDR has been rated it is applied to the customer's account, where discounts can be applied and from which a bill is created. Operators usually produce bills in cycles, spreading the load over a month or quarter and also evening out cash flow.

Within SITE your tariff model can be replicated. Thus, not only the raw data of CDRs can be compared but in addition also the correct billing of a service can be verified. Thanks to SITE, fast regression testing of new pricing plans against a variety of test cases can be performed, detecting potential flaws in the billing process at a very early stage.



Ensure correct billing, for you and your customers



- Invoice comparison
- Resource allocation for different users or groups
- Detailed test reports
- Revenue stream audit
- Covering billing aspects of outbound roaming



Prepaid SIM Recharging

With prepaid subscribers you make substantial profits

Prepaid subscribers expect correct voucher recharging.

Keynote SIGOS provides a tool to verify Prepaid SIM Card Recharging.

SITE or GlobalRoamer have the ability to check if recharging procedures of prepaid cards has been performed successfully.

Test Cases collect information about the current account balance and establish a call in the same way a subscriber does. That means entering vouchers using DTMF tones for navigating IVR menus or using USSD commands where supported. After a SIM card recharging attempt the account balance of a dedicated prepaid SIM card is re-checked and compared to balance before recharging attempt.

Besides using single vouchers (e.g. from scratch cards) for a single test, Keynote SIGOS Test Systems support comprehensive voucher repository functionality managing numerous numbers.

Further customer specific account verification methods (e.g. via SMS) are also supported on request.

Sample Features

- Detection of revenue leaks due to SIM card recharging errors
- Increase of customer satisfaction and spending due to error free SIM card recharging
- Simplified prepaid SIM card handling in the central SIM Multiplexer

Sample KPIs

- Initial account balance
- Account balance after recharge
- Used Voucher for recharge
- Received USSD response string
- USSD process duration



Ensure correct billing, for you and your customers

