ascom

TEMS™ MONITOR MASTER
REVENUE ASSURANCE SOLUTION

TEMS Monitor Master is a carrier-grade software and hardware solution to test and monitor wireless and fixed line services.

BILLING AND REVENUE CHALLENGES FOR OPERATORS

- Revenue leakage affects the bottom line.
- Incorrect billing disrupts customer relations as well as partner and regulatory relationships.
- New services have little time for testing before implementation.

SOLUTION

TEMS Monitor Master includes advanced functionality to provide end-to-end revenue assurance.

- Call generator, CDR comparisons, rating, and billing verification functionality.
- Verification of the entire billing and rating process from customer usage to the final bill.
- Carrier-grade tools today for tomorrow's services.
- 24x7 monitoring for proactive fault fixing to minimize downtime and maximize revenue.

BENEFITS

- **Industry-leading flexibility**. Tests for new services can be created quickly without changes to the product.
- **Detailed trace capabilities**. More detail is captured than from handsets alone, allowing the right billing measurements to be recorded.
- **Interactive Mode**. Ad-hoc real-time tests can be run at any location.
- **Powerful reporting**. User reports and data export in formats that support downstream systems.
- **Wide-ranging usefulness**. TEMS Monitor Master provides a solution that fits operators, regulators, and content providers.

TEMS MONITOR MASTER OFFERS

- Industry-leading flexibility allows tests for new services to be created quickly without product change.
- Detailed trace capabilities give more detail than a handset alone and allow the right billing measurements to be recorded.
- Interactive Mode can run ad-hoc real-time tests at any location.
- Powerful user reporting and data export in the format for downstream systems.

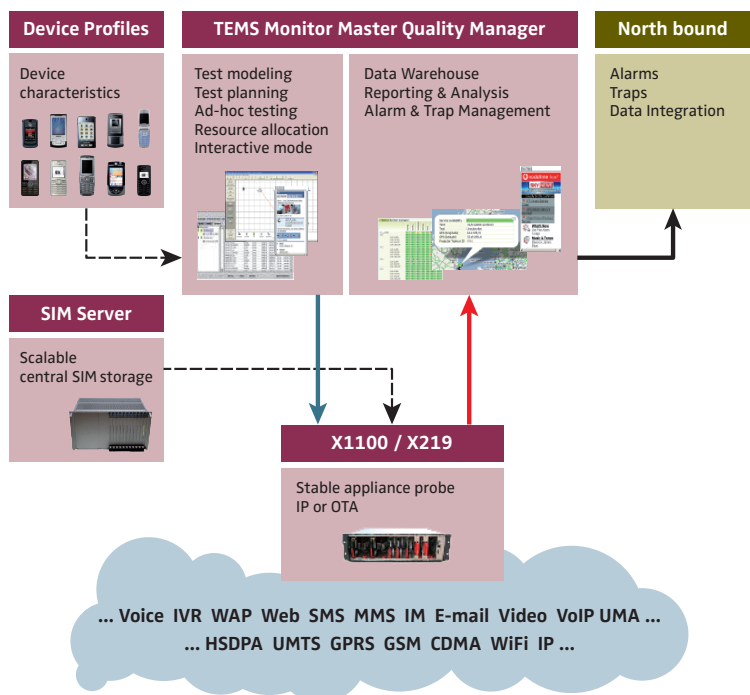## ENSURING ACCURATE BILLING

Accurate billing is crucial to the success of an operator's business. Over-charging damages customer relations, and also can lead to regulatory problems. Charging too little negatively affects the bottom line. Incorrect revenue sharing interferes with partnerships.

Maintaining accurate billing is a constant challenge. New services must be introduced quickly, which reduces the time available for testing them before deployment. New technical skills are needed to keep up with the latest generation of converged technologies. Even normal day-to-day network operations introduce new errors and increase the likelihood of revenue leakage.
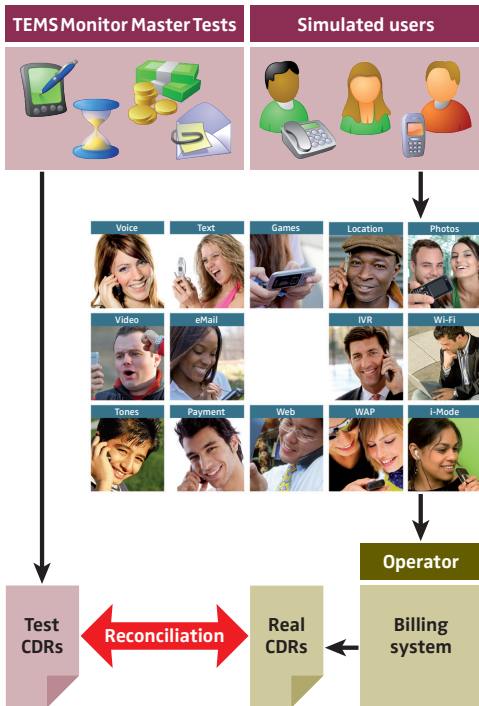
To ensure accurate billing, the Revenue Assurance solution based on the TEMS Monitor Master platform focuses on end-to-end 24x7 validation and monitoring of complex user transactions.

TEMS Monitor Master components are built using our established Quality Manager architecture, providing the levels of flexibility, reliability, and performance operators demand. The platform supports distributed agents and centralized management, and is extremely configurable and flexible. An ASIM Server provides centralized storage for all SIMs. This allows flexible call campaigns including roaming scenarios.
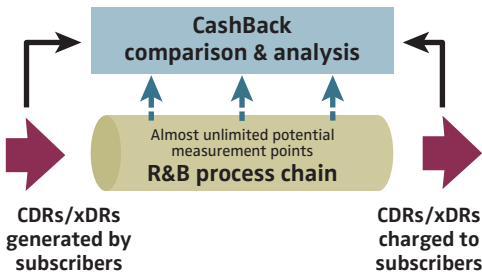
Interactive Mode allows probes to be used in any location, like a phone on a desktop, for ad-hoc interactive voice and data testing. Tests to simulate the actions of users accessing different services are scheduled to run at different locations, using different SIMs and APNs.

Typical TEMS Monitor Master architecture

CDR comparison

CDR reconciliation

USES OF TEMS MONITOR MASTER FOR REVENUE ASSURANCE

CDR Comparison. TEMS Monitor Master generates calls for voice and data services to produce test Charging Data Records (CDRs). Calls are scheduled to run automatically or on an ad-hoc basis using Interactive Mode. The test CDRs are then correlated with the real CDRs.
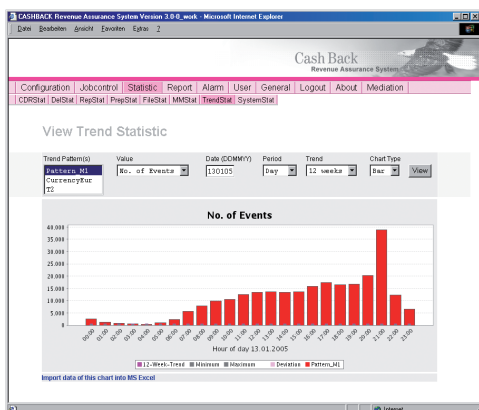
Turnkey Solution. TEMS Monitor Master has been integrated with Ascom's CashBack module to provide a turnkey solution for complete rating and billing verification, from call generation to the final bill. TEMS Monitor Master triggers the test calls according to a test plan to generate the CDRs. CashBack traces calls throughout the billing chain to identify revenue leakage.

Multi-modal transactions. TEMS Monitor Master supports easy modeling of complex user transactions such as ringtone and game downloads. These services, accessed via a WAP portal, can be monitored with automatic billing verification. TEMS Monitor Master has the flexibility to test the operator's billing rules; for example, it is possible to verify that a subscriber is charged for a first ringtone download but not charged when the same ringtone is downloaded again
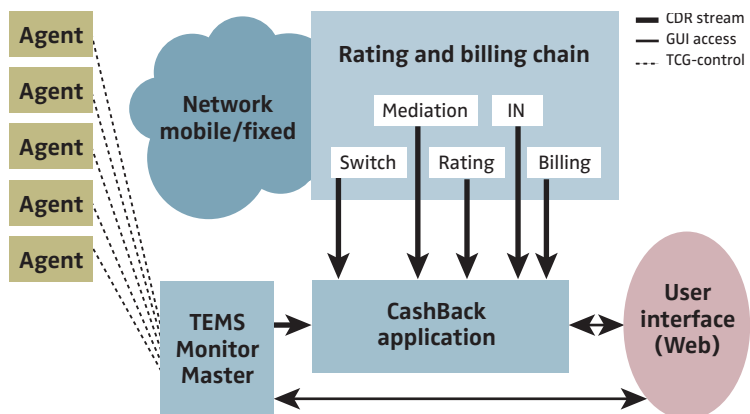
TOTAL FLEXIBILITY

In addition to basic voice and data services, consumers are increasingly interested in new applications including Web 2.0 and user-generated content. As the billing models for these services are established, the flexibility of TEMS Monitor Master will be able to handle every new challenge.

The TEMS Monitor Master platform, supported by expert consultants, can meet the requirements for all major billing concerns, including regulatory compliance, automatic reconciliation, and partner revenue sharing.

CashBack report of CDR statistics

Integration with TEMS Monitor Master

USAGE SCENARIOS

Revenue Assurance tests. Large systems can be used my numerous users performing checks on voice and data service, including ad-hoc interactive tests, periodic campaigns, and network-wide checks. TEMS Monitor Master can provide frequent input for reconciliation to contribute to real savings.

Billing System tests. TEMS Monitor Master makes test calls to prove that each new change in the billing system is correct and produces no undesirable side effects.

Network upgrade tests. TEMS Monitor Master can be used to prove that network changes and upgrades do not upset the billing value chain. TEMS Monitor Master runs a suite of tests to prove that services continue to function and bill correctly after any network change. Changes are often quite localized to specific regions; TEMS Monitor Master's distributed proves are therefore able to focus testing on these regions as well as to cover all possible service call types to ensure complete coverage.

BENEFITS OF TEMS MONITOR MASTER

- Repeatability – Identical tests can be performed again and again. After a change is made, the test can be run again, until the desired results are obtained.
- Efficiency – Many more tests can be performed over a given time period without loss of accuracy than is possible with a manual system.
- Coverage – Thorough tests can be performed to exercise all scenarios that might be encountered by real users.
- Detail – Detailed results are stored for immediate use to help diagnose faults. They can also be used over longer periods to demonstrate compliance with regulatory requirements.
- Objectivity – Any test failure can be seen at a glance; the detail available from the test helps resolve any issues much more quickly than using an ad-hoc manual approach.
- Rapid time to value – Estimates of revenue loss through leaks can go as high as 10% for new services. Identifying and correcting links is essential for success.

TEMS Monitor Master provides the carrier-grade tools you need now and in the future to deliver a visible return on investment.