#### F.No.305-34/2006-QOS Telecom Regulatory Authority of India Trikoot-I, 2<sup>nd</sup> Floor, Bhikaji Camaplace, New Delhi – 110 029

Dated 28<sup>th</sup> August, 2006

То

All Cellular Mobile Service Providers All Unified Access Service Providers All Basic Service Providers.

# Subject: Notification of the panel of Auditors to certify the Metering and Billing System of service providers.

Sir,

In accordance with the Quality of Service (Code of Practice for Metering and Billing Accuracy) Regulation 2006 dated 21st March, 2006, TRAI has been in the process of forming the panel of auditors to certify the metering and billing system of service providers. A copy of the Terms of Reference issued in this regard is enclosed. The Terms of Reference give details of the methodology for carrying out the audit of the metering and billing system and audit report thereon. TRAI has now finalised the Panel of Auditors and accordingly hereby notify the following firms in the Panel of Auditors:

- 1. M/s S.R. Batliboi & Associates, Bangalore
- 2. M/s Anil Ashok & Associate, Mumbai
- 3. M/s M.M. Nissim and Co., Mumbai
- 4. M/s RITES Ltd., Gurgaon
- 5. M/s TUV South Asia Pvt. Ltd., New Delhi.
- 6. M/s Sanjay Gupta & Associates, New Delhi

2. The details of the contact person of these firms are enclosed. An illustrative checklist, finalised in consultation with these firms, covering various aspects, which shall be examined by the auditors is also enclosed.

3. For the year 2006, since the appointment of the panel of auditors has been delayed the service providers can complete their audit by 31<sup>st</sup> October, 2006 and action taken report on inadequacies, if any, pointed out by the auditor need to be submitted by 31<sup>st</sup> December, 2006.

4. It may be noted that though the service providers are free to engage any one of the Auditor from the notified Panel of Auditors, they shall not engage an Audit Agency consecutively for more than two years and also they shall not engage an Audit Agency, which is currently their Statutory Auditor or Internal Auditor or Concurrent Auditor or has been engaged as Consultant.

Yours faithfully,

(M.C. Chaube) Advisor (QOS)

Encl: as above

#### DETAILS OF CONTACT PERSONS OF THE AUDIT AGENCY NOTIFIED BY TRAI TO CERTIFY THE METERING AND BILLING SYSTEM

- Shri Nilangshu Katriar, Senior Manager. M/s S.R. Batliboi & Associates, 2<sup>nd</sup> Floor, A-Wing, Divyashree Chambers, Langford Road, Bangalore – 560 025. Telephone No (D).+91-80-4118-6075, Phone (O) +91-90-4118-6000 Mobile +91-98440-10710 FAX +91-80-4114-6677 / +91-80-2224-0695, E-mail: nilangshu.katriar@in.ey.com
- Shri Anil Bhandari, Partner, M/s Anil Ashok & Associates, B-24 Manubharti, Azad Lane, S.V. Road, Andheri (W), Mumbai – 400 053. Telephone No.+91-22 6675-0301/02, +91-22-2671 5522 Mobile +91-98210-37605 FAX +91-22-6675 0302 E-mail: anilbhandari@anilashok.com
- 3. Shri Samir Mehta, Partner, M/s M.M. Nissim and Co., Chartered Accountants, Barodawala Mansion, B-Wing, 3<sup>rd</sup> Floor, 81, Dr. Annie Besant Road, Worli. Mumbai – 400 018. Telephone No.+91-22-2494-9991, +91-22-2496-9903 Mobile +91-98210-53313 FAX +91-22-2494-9995 E-mail: samirmehta@mmnissim.com mail@mmnissim.com nissim@vsnl.net

- 4. Shri S. Chakravarty, General Manager (Tele), Telecom Group, M/s RITES Ltd.,
  1, RITES Bhawan, 5<sup>th</sup> Floor, Left Wing, Sector – 29, Gurgaon – 122 001, Haryana. Telephone No.+91-124-2571-650, +91-124-2818-550 Mobile +91-98181-45678 FAX +91-124-2571-660 E-mail: gmtele@rites.com
- Shri J.K. Rajan, Vice President – Industrial Services, M/s TUV South Asia Pvt. Ltd., C-27, IIIrd Floor, Qutab Institutional Area, New Delhi – 110 016. Telephone No.+91-11-4168-8423 to 27, Mobile +91-98713-82551 FAX +91-11-4168-8421 E-mail: JK.Rajan@tuv-sud.in
- 6. Shri Sanjay Gupta, Revenue Assurance Head, M/s Sanjay Gupta & Associates, C-4E/135, Janak Puri, New Delhi – 110 058, Telephone No.+91-11-2554-7949, 2555-7949, Mobile +91-98100-41074, 92165-88112, FAX +91-11-2561-9535, E-mail: info@sgassociate.com

### Illustrative Checklist for audit as per Quality of Service (Code of Practice for Metering and Billing Accuracy) Regulation, 2006 and Terms of Reference dated 5<sup>th</sup> May, 2006

Sr. No.	Particulars	
1.	Name of Service Provider	
2.	Name of Licensed service Area (For each circle) ; Basic services, Cellular Mobile services (GSM & CDMA) separately)	
3.	No. of tariff plans for each licensed area for each circle	
4.	No. of subscribers for each tariff plan	
5. 6.	Tariff plans to be audited for each licensed service area for each circle (Plans having more than 10% of total subscribers in each licensed area for each circle subject to maximum of 10 service plans per licensed area. The number of sample size to be checked in each plan verification should be such so as to achieve a confidence level of 95% at a confidence interval of 3%). Is billing centralized for all circles? If not, specify decentralized locations	Tariff Plan No. of sub- Sample scribers size (1) (2) (3)
7.	Software Application(s) used for metering & billing functions (also specify the version)	
8.	Switches( also specify the version)	
9.	Date of Commencement of Audit	
10.	Date of Completion of audit	
11.	Date on which Report was closed with responses from the auditee	

#### Preliminary Sheet (Table-A)

#### **Process Review**

# Compliance with regard to Code of Practice for Metering and Billing Accuracy

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
1	Information relating to Tariffs			
1.1	Before a customer is enrolled as a subscriber of any telecommunication service, he shall be provided in advance with detailed information relating to the tariff for using that service, in accordance with TRAI's Direction No.301- 26/2003- TRAI(Eco) dated 2nd May, 2005 and No.301- 49/2005-Eco dated	and check whether he		
	16.09.2005. Further, the service provider should inform the customer in writing, within a week of activation of service, the complete details of his tariff plan. Such information shall be in the format "C" prescribed in TRAI Direction No.301-26/2003-TRAI (Econ.) dated 2nd May, 2005.	notified the complete details of tariff in writing within a week of ac1tivation (take sample cases and test check)		
	In addition, the following information shall also be provided: Quantity related charges (e.g. the charge for each SMS message, or kilobyte of data transmitted).	<ul> <li>Verify availability of information in tariff plan</li> </ul>		
	<ul> <li>Accuracy of measurement of time, duration and of quantity, and also the resolution and rounding rules, including the underlying units, used when calculating the charges for an individual event or an</li> </ul>	<ul> <li>Verify accuracy of measurement and rounding rules.</li> </ul>		

## (Table – B)

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
	aggregation of events			
	<ul> <li>Contractual terms and conditions for supply, restriction and cessation of Service</li> </ul>			
	<ul> <li>The service providers shall intimate a postpaid customer in advance about his credit limit. This information should also be available in the monthly statement/ bill of the customer on a regular basis. Service shall not be discontinued as long as the amount due is below the amount and his security deposit or the specified limit whichever is higher. TRAI Direction dated 27.06.2005 and 07.06.2006 refers.</li> </ul>	intimating credit limit to subscribers. Check for instances where connections have been de-activated on the ground of the subscriber		
	<ul> <li>The service provider cannot increase tariff on any item within six months of enrolment in a tariff plan. Telecommunication Tariff Order (31<sup>st</sup> amendment) notified on 07.07.2004 refers.</li> </ul>	that no tariff item has		
	<ul> <li>The customer is free to move from one tariff plan to another without paying any fee for migration.</li> </ul>	<ul> <li>To verify from bills of subscribers who have changed their tariff plans to ensure that no migration charges have been levied.</li> </ul>		
1.2	The information required in the clause above shall be available on the Service Provider's web site, as prescribed in TRAI Direction No.301-26//2003-TRAI (Econ.) dated 2nd May,	<ul> <li>Obtain website URL.</li> <li>Log onto website and verify whether mentioned details are available for each Tariff plan.</li> <li>Establish whether above</li> </ul>		

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
	2005 (Format- C).	information is available on the website in accordance with TRAI directives.		
1.3	Where a value-added service (e.g. download of content, such as a film clip or ring tone) or entry to an interactive service (such as a game) can be selected through a choice of the service user (e.g. by dialing a specific number) then the charge for the service must be provided to him before he commits to use the service.	services. Take sample from each value-added services and check the procedures completely Verify whether the charge for		
2	Provision of Service			
	The services provided to the customer and all subsequent changes therein shall be those agreed with him in writing prior to providing the service or changing its provisions.	customer requests for services • Verify procedures for		
3	Accuracy of Measurement			
3.1	All charges must be consistent with the published Tariff applicable to the end-user charged.	CDRs with reference to tariff plan opted by customers and by making calls in each selected plan		
3.2	Unless otherwise specified in the published Tariff or previously agreed Tariff, a charge shall be determined in accordance with the following limits: a) Where the charge is dependent upon duration, the recorded duration shall be measured to within: • Between +1 seconds and -1 second; or • Between +0.01% (1:10,000) to -0.02% (1:5,000) whichever is less stringent; and	<ul> <li>Test check sample records to establish correctness of parameters.</li> </ul>		

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
	<ul> <li>b) where the charge is dependent upon the time of day, the time of day shall be recorded to within ±1 second, traceable to an appropriate time reference; and</li> </ul>	records to establish correctness of		
	c) where the charges are dependent upon the counting of occurrences of a particular type, the count shall be accurate to no more than plus 1/25,000 (0.004%) or minus 1/1,000 (0.1%).	<ul> <li>Test check sample records to establish correctness of parameters.</li> </ul>		
3.3	Where measurement under clauses 3.2 (a), (b) & (c) reveals systematic errors in timing or counting that result in overcharged events which are not stated in published Tariffs then correction should take place to ensure accurate Bills.	<ul> <li>Verify with the records whether corrective action has been taken.</li> </ul>		
4	Reliability of Billing			
4.1	The performance of a Total Metering and Billing System	procedures applied above, take the total deviation and		
	b) the sum of the values of the errors in the overcharged events or undercharged events, as a proportion of the total value of the total number of Chargeable events, shall not exceed			

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
	the limits shown in Table 1. Table 1 – Total Metering and Billing System reliability performance requirements			
4.2	order for a service, feature or discount which depends on the number or duration of chargeable events is applied at variance with published Tariffs, each chargeable event within the scope of the incorrectly applied order shall be an undercharged event or an	plan		
	overcharged event, as appropriate, for the purposes of clause 4.1.			
4.3	Where an item of service usage is completed other than intended, but the charge applied is correct for the service as delivered, this shall not be regarded as either an undercharged event or an overcharged event.			
4.4				
5	Applying Credit to Accounts			
5.1	For post-pay accounts, payments made by a customer			

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
	shall be credited to his account within 3 working days of receipt of the cash/ cheque. Where credit is given by the service provider, this shall be applied within one working day of its agreement.	<ul> <li>Take payments sample to check whether the credit is applied correctly.</li> <li>Check that the payments made by the customer are regularly updated in the billing system.</li> <li>Updation in respect of post-pay customers to be credited within 3 working days of receipt of the cash/cheque.</li> </ul>		
5.2	For pre-pay accounts, top-up credit shall be applied to a customer's account within 15 minutes of its application. Where credit is given by the service provider, this shall be applied within 1 day of its agreement.	<ul> <li>Review the system settings and take sample cases to test whether the conditions are met.</li> </ul>		
6	Timeliness of Post Pay Billing			
6.1	······································	1		
6.2	Any chargeable events the details of which are not available when the bill is prepared shall be included in a subsequent bill, but not later than the fourth monthly bill after the chargeable events occurred. Any details not so presented shall be written off and if significant be counted against the performance for undercharged events in clause 4.1. Exceptionally, event details from a separate service provider may be billed up to three months after receipt.	<ul> <li>Review the process of chargeable events.</li> <li>Take sample for such cases (typically where the customers are National or International Roaming)</li> <li>Obtain list of all such events (that have occurred) for the period under review</li> <li>Review procedures of inclusion of such events in subsequent bill (Whether such charges are separately identifiable)</li> <li>Review procedures for writing off of such charges.</li> </ul>		

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
		<ul> <li>Verify whether all such charges have been included for calculation of 'undercharged events'</li> <li>Check that all calls billed are in respect of the billing period referred on the bill and also to verify whether the discounts, if any, have been properly passed on to the customers without any errors.</li> </ul>		
6.3	Agreement to extend the timescales described in clause 6.2 may be sought from the TRAI. An extension will only be available on an irregular basis. Decisions will be made on application for an extension concerning: a) The method in which how customers will be informed of a protracted delay in rendering call records onto a subsequent bill; and b) The integrity of the billing process audit arrangements.	<ul> <li>Review any exceptions sought from TRAI for extension.</li> <li>Review the method in which such clients have been intimated and verify the process for such issues</li> <li>Verify whether there is appropriate audit procedures implemented within the company to address such issues</li> </ul>		
6.4	The service provider shall contract with its delivery agent to ensure that an effectual bill or bill data file delivery schedule is in place. The existence of such a contract shall be subject to audit.	<ul> <li>Obtain &amp; verify all bill delivery vendor contracts</li> <li>Test &amp; establish effectiveness and adequacy of procedures and process</li> </ul>		
7	Restriction and Removal of Service			
	Where the service provider unilaterally intends to restrict or cease service to the customer, a notice shall be provided to the customer in advance of	adequacy thereof <ul> <li>Test similar instances</li> </ul>		

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
	such action so that the customer has reasonable time to take preventive action to avoid restriction or cessation of service.	<ul> <li>Check that proper notices</li> </ul>		
8	Complaint Handling			
8.1		service provider has a documented process for identifying, investigating and dealing with billing complaints.		
8.2	The service provider shall carry out a root cause analysis for each upheld billing complaint, categorise the cause and establish proportionate remedial action to correct it.	<ul> <li>Review the Billing Complaint system</li> <li>Review process manual for addressing customer complaints and establish adequacy of procedures</li> <li>Test instances during review period and</li> </ul>		
8.3	then all affected Bills shall, if practicable, be included in a recovery programme.	<ul> <li>establish adherence to documented procedures</li> <li>Review &amp; verify procedures for root cause categorization and analyses</li> </ul>		
8.4	Where remedial action has not been completed and the cause is likely to affect other bills when issued, then the service provider shall take reasonable steps to ensure that they are checked and, if necessary, corrected, before being sent to the customer. If not checked and corrected such Bills shall be included in a recovery programme (clause 8.3).	<ul> <li>Check whether the service provider carries out root cause analysis for each upheld billing complaint and where the root cause affects multiple customers, whether all affected bills is included in a recovery program.</li> <li>Test and verify instances of remedial action</li> </ul>		

Sr. No	Audit Area (item name)	Test to be performed	Observation	Observation Category
		<ul> <li>Verify adequacy of procedures in this regard</li> <li>Check the true and correct position about specific instance of billing complaints having systemic/ generic implications as referred by TRAI.</li> </ul>		
9	Materiality			
	Compliance with the requirements contained in this regulation shall need to be demonstrated only in relation to products and services that have a material impact on the customer's bill. This materiality is deemed to be: a) where the service provider's turnover from a product or service comprises 5% or more of its total turnover with the customers targeted for that product or service; or b) where the number of customers subscribing to a product or service offered by the service provider comprises 5% or more of the customers targeted for that product or service; or c) at the specific direction of the TRAI.	Observations, if any		
10	Submission of Compliance			
	The service providers shall submit the compliance of above code of practice to TRAI on yearly basis.			

# Billing & Metering System Review (Transaction Review) (Table – C)

Sr. No.	Audit Area (item name)	Test to be performed	Observation	Observation Category
1	The auditing Agency shall evaluate inter alia the correctness of the following: - (a) In generation process of the CDR-raw CDRs.			
	(b) Of the entries in the direction table which is used for rating the raw CDRs.	<ul> <li>Verify rating masters to establish procedures for creating and modification of service charges</li> <li>To verify the proper configuration of all the tariff plans in billing system.</li> <li>Verify rating masters to establish charges mapped to each tariff plan</li> <li>Test whether rated CDR's are modifiable.</li> </ul>		
	(c) In charging of VAS services to the subscribers.	<ul> <li>Obtain list of all VAS services</li> <li>Verify procedures for mapping of charges to VAS services</li> <li>Verify whether any VAS provided without consumer's consent and charged.</li> <li>In respect of services provided during "Free Trial Period" to subsequently check whether the customer has confirmed the continuance of services once the free trial period has ended and accordingly billed for.</li> </ul>		
	(d) Of the rated CDR vis-à- vis the rated applied, duration mentioned, origination and destination codes	<ul> <li>Verify procedures for mapping of call origination and destination locations.</li> <li>Raw CDR's to be rated</li> </ul>		

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	including STD/ISD destinations, both for mobile and fixed.	<ul> <li>according to the Tariff Plans and Rating Algorithms (set of tables/ rate masters)</li> <li>Check all billable activities occurring on the network are accurately captured, rated and billed in accordance with customer agreement.</li> <li>Check that there is no delay in updation of billing with latest agreed upon rates/ tariff implementation.</li> <li>Due to non-updation / rating, a CDR generated may go to suspended CDR's pool which may be billed subsequently. In such cases to check that it is billed subsequently for the same period and is in line with the agreed Tariff Plans.</li> <li>To check discounts / schemes not forming part of the original contract are properly passed on by the Service Providers in respect of the various marketing schemes promoted by the Service Provider from time to</li> </ul>	
	(e) In charging of the roaming services to the mobile subscribers	time. Verify procedures for applying roaming charges and also evaluate inter alia the correctness as per the published tariff.	
2	The Audit Agency will take the raw CDRs & process the same to generate the Bill and then verify with already generated bill for any discrepancy. The CDRs of last three months are to be processed.	<ul> <li>Obtain CDR's for selected audit sample</li> <li>Apply procedures on selected sample</li> <li>Compare the results to ensure that the service provider systems are functionally correct.</li> </ul>	

2		Discropanay analysis of the	
3	The Audit Agency will	Discrepancy analysis of the rated CDR's to be done.	
	analyse the discrepancy if detected, and find out the		
	root cause of the same.	If required perform further	
		functional testing on	
	Discrepancy Analysis	system to identify the	
	The discrepancy analysis is		
	done by execution of the		
	inference engine that		
	performs analysis of the		
	rated CDRs in order to		
	establish causes of the		
	discrepancy based on CDR,		
	subscriber and pricing plan		
	data.		
4		To analyze the bill level	
	analysis.	discrepancy reports as	
	-	generated by the Service	
	After several cycles of event	Provider.	
	level discrepancy analysis		
	and database adjustment,		
	when all the event level		
	discrepancies are taken care		
	of, the next step is of bill		
	level discrepancy. The bill		
	level discrepancy reports will		
	be produced & analysed by		
	the audit Agency.		
5	Verification of corrective		
	actions.	corrective actions.	
	In this important stage, a verification of successful		
	implementation of the		
	corrective action is		
	performed		
6	Billing system integration for		
		system is integrated so as	
		to ensure that proper rental	
	Regulation on Quality of		
	Service of Basic and Cellular		
	Mobile Telephone Services,	where the faults are not	
	2005 dated 1 <sup>st</sup> July, 2005)	rectified within three days	
		(for basic service).	
		• Faults pending for >3	
		days and <7 days: Rent	
		rebate for 7 days.	
		<ul> <li>Faults pending for &gt;7</li> </ul>	
		days and <15 days:	
		Rent rebate for 15 days	
		• Faults pending for >15	
		days: rent rebate for 1	
		month	
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#### Audit Report for Service Area: (Indicate service Area)

1. Audit observation on each item of the Terms of Reference and Quality of Service (Code of Practice for Metering and Billing Accuracy) Regulation 2006 dated 21<sup>st</sup> March, 2006 covering the following:

- (a) Details of test cases taken
- (b) Audit Observations
- (c) Reasons/cause for occurrence of item referred in the audit observations.
- (d) Category of Audit Observation (clause 5.10 of TOR)
- (e) Auditee comments (with compliance timeframes) (clause 5.10 of TOR)
- 2. Comment on Clarity/transparency in respect of bill presentation to the customers.
- 3. Report on the Tariff Plans audited.
- 4. The detailed methodology for carrying out the audit. The methodology should cover all points stated in para 5.11 of the Terms of Reference.
- 5.. Report whether the service providers meet the defined levels of accuracy vis-à-vis the Quality of Service (Code of Practice for Metering and Billing Accuracy) Regulation 2006.
- 6. Certificate that the Auditor has received all information and explanation from the service provider, necessary for the purpose of audit. In case of any deficiency on the part of the service provider, comment on that.
- 7. Comment about the authenticity of the information received from the service provider for carrying out the audit.
- 8. A certificate of compliance with reference to clause 5.3 to 5.5 and 8 of the Terms of Reference dated 5<sup>th</sup> May, 2006.
- 9. Detailed Audit Report shall draw of inferences and analysis for each service area and separately for each service. The Report shall clearly specify whether the service provider meets the defined level of accuracy/ compliance. The deficiencies and observations should be clearly brought out in the Report.. The Checklist for QoS (Code of Practice for Metering and Billing Accuracy) Regulation, 2006 as per the Table A, B and C shall form part of the Audit Report.
- 10. Suggestions for improvement concerning the checklist.

Note: The checklist is only illustrative and not exhaustive. The Auditing Agencies are free to add any other points/ procedures for verification to ensure that the concerns of the Authority as stated in the Terms of Reference and further amplified in the letter dated 20<sup>th</sup> July, 2006 issued to Auditing Agencies are fully addressed in the reports to be submitted by the Auditing Agencies.