# Quality of Service Monitoring

17th - 21st February 2014, Kingston, Jamaica





# Overview

Setting and enforcing service quality standards between networks as well as for consumers is a key mandate for regulators. This course provides the techniques used to monitor and enforce quality standards, from network transmission and interconnection to market intelligence gathering. All areas that affect Quality of Service (QoS) at the access or transmission level are covered in detail.

For more information about this course, or to register, contact us on:

Tel: +44 (0) 208 600 3800 Fax: +44 (0) 208 600 3819 Email: programmes@cto.int

### **OBJECTIVES**

- To gain an in-depth understanding of Quality of Service (QoS) framework for PSTN service, Broadband Service (Mobile and fixec) and Public Land Mobile telecommunication service & internet Service
- To focus on regulating QoS which will include standards setting process for setting benchmarks for key performance indicators, measurement, and reporting methodology
- To understand the reporting requirements for service providers and periodic performance monitoring reports and audit/survey mechanism by regulatory staff or independent agency will also be included for evolving effective enforcement and monitoring mechanism.
- To familiarise the participants with the execution of drive test (setup & conduction), benchmarking (including multiple networks), and also generating analytical reports from data collected through drive tests.

# TARGET AUDIENCE

This course is aimed at network engineers and technicians as well as regulatory officers responsible for competition and consumer interests.

# EXPECTED OUTCOMES

#### On completion of this course, participants will be able to:

- Understand the Quality of Service framework for monitoring performance of the service providers of fixed line telephone service, broadband service and mobile telephone services
- Monitor and analyse the performance of the service against the Key Performance Indicators (KPI)
- · Select the appropriate KPIs
- Analyse data from BTS, OMC-R, POI, drive tests, CDR, Call centre
- Understand steps involved in drive test set up and execution and data collection
- Perform benchmarking & optimisation

# OUTLINE

The following topics will be covered during the training programme:

#### **Defining QoS**

#### What are the QoS requirements of common applications-PSTN, Mobile and Broadband?

- What can networks offer in terms of QoS today? commercial challenges of QoS
- Who should pay for QoS, business or consumers, senders or receivers?
- · Why does this matter?

#### What kind of assurance should carriers provide with QoS?

- KPIs and their measurement
- PSTN
- Broadband (Mobile and Conventional)
- Mobile Telephone Networks
- Performance evaluation and reporting with assignments
- · Identification of KPIs and benchmarking
- Drive test, analysis and Optimisation (demo with actual data)
- BTS testing and fault analysis
- Data collection and analysis from OMC-R
- Traffic analysis at POI

## **FACULTY**

#### **Gaurav Kapoor**

Mr Gaurav Kapoor is currently working for Bharat Snachar Nigam Limited (BSNL), a Bachelor of Engineering in Electronics & Telecommunications and has a lot of experience GSM RF planning and optimisation in telecommunications. With over nine years experience he has been involved in the operations and maintenance of GSM 2G and 3G networks and has worked with equipment from vendors like Alcatel-Lucent and Ericsson. Vr Kapoor has trained Engineers on the field in RF network planning and optimisation of GSM Networks.



Bharat Sanchar Nigam Ltd. was incorporated on 15th September 2000. It took over the business of providing of telecom services and network management from the erstwhile Central Government Departments of Telecom Services (DTS) and Telecom Operations (DTO), with effect from 1st October 2000 on going concern basis. It is one of the largest & leading public sector units providing comprehensive range of telecom services in India.

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Please fill in this application form and fax it back to  $+44\ 20\ 8600\ 3819$  or return it to the CTO at the e-mail address below. Please use CAPITAL LETTERS.

Personal details		
Mr/Mrs/Ms/Other	First name	Last name
Job title		
Organisation		
Address		
City	Postcode	Country
Tel	Mobile	Fax
Email		
Authorising line manager's name		
Authorising line manager's email		
Payment options		
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Non-member Rate - US\$1650		
2) Payment mode (choose one option only)		
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Date	Name	Signature
Additional information To help us improve our services to you and your organisation, please tell us more about		
Your role in the organisation	yourself and your organisation.  Your area of work in the organisation	
Strategic / executive	☐ Business development	☐ Marketing and sales
☐ Planning	Customer parties and care	Public relations and corporate communications
☐ Control ☐ Operational	<ul><li>☐ Customer service and care</li><li>☐ Engineering and technical management</li></ul>	☐ Regulatory and legal affairs ☐ Telecoms network management
S operational	Financial, purchasing & investor relations	☐ Human resources
	☐ IT / IP management	Other
Varia arganization time		
Your organisation type	Your organisation's service areas	
Government	Fixed network / services	☐ Broadcasting
Government Regulator	Fixed network / services  Mobile / wireless network / services	☐ Value-added services
Government	Fixed network / services	_

#### **REGISTRATION DEADLINE**

Prior to course start.

#### **3 SIMPLE WAYS TO REGISTER**

Fill in and fax this form back to +44 20 8600 3819

Call the programme team at +44 20 8600 3800

E-mail the programme team at programmes@cto.int, quoting the course title.

#### **NEED HELP?**

Call us now on +44 20 8600 3800 or e-mail the programme team at programmes@cto.int

#### **Summary Terms and Conditions**

The CTO will endeavour, as can be reasonably expected, to ensure that the course is delivered to meet delegates' expectations. Registration is subject to availability and payment received by the deadline where specified for each course. Dates may be subject to changes. Travel, accommodation, daily transportation to venue, subsistence and other costs are the sole responsibility of the delegate and are not included in the above fees. Applicants are responsible for their visa arrangements and other formalities wherever required. Course bookings may be cancelled at the discretion of the CTO or its partners. Applicants paying by bank transfer are responsible for bank charges and any other such costs and should ensure the exact amount in GBP Sterling is credited in the CTO bank account. Applicants requiring additional information prior to their booking should ensure they provide sufficient time before the booking deadline. Cancellation rules apply, as summarised below. For a full version of our Ethical Framework or ourTerms and Conditions, please visit our website at www.cto.int.

#### Cancellations / Refunds

For delegate cancellations/withdrawals, the following refund rules apply:

- 31 days or more prior to event: the full amount less a handling charge of 10% or a minimum of £55, whichever applies
- 30 days or less prior to event: no refund

For CTO cancellations/withdrawals, delegates are entitled to a 100% refund within 60 days of the withdrawal/cancellation. Refunds will be made by bank transfer only.

#### Data Protection / Privacy

The CTO does not sell, rent or lease its customer information to third parties. We may, from time to time, contact you on behalf of a third party/partner about a particular offering that may be of interest to you. In those cases, your unique personally identifiable information (email, name, address, telephone number) is not transferred to the third party/partner. In addition, we may share your information with trusted partners to help us perform statistical analyses, send you by e-mail or postal mail, provide customer support, or arrange for deliveries or other such services. All such third parties are prohibited from using your personal information except to provide these services to the CTO and they are required to maintain the confidentiality of your information. For more information about our privacy policy, visit our website at

www.cto.int