Mobile Data: Billing, Pricing & Security
Three Day GPRS Hammer-Head Program
Monetize Mobile Data

Revenue Assurance for Wireless Data

The Mobile Data: Billing, Pricing, and Security Program provides members of the Revenue Assurance, Fraud and GPRS-related teams (network, I/T, finance, operations, marketing) with a comprehensive guide to running a profitable, risk-contained, data business. This course covers the breadth and depth of operational proficiency, risk containment, and profit maximization in a highly condensed version of the standard GRAPA certification program. This program assumes that students have a prior understanding of telecommunication, revenue assurance, and GPRS operations, and focuses on profit maximization and risk minimization throughout the Data line of business.

GPRS 101
GPRS and the Role of RA
Assuring the GPRS - ISP

GPRS 102
Data Revenue Streams
GPRS Billing & Roaming Controls

GPRS 103
360º Data Environment Protection
Pricing, Profit and Marketing

GRAPA

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To help telecoms professionals address mobile data challenges, GRAPA has developed the 3-day GPRS Hammer-Head Program. This program is designed to provide telecoms professionals with an exhaustive, focused and practical exposure to all of the major GPRS issues and risks to the company's profits. This program combines over 32 hours of structured lecture based training in the understanding, optimization and protection of data revenue streams with workshop exercises to enable teams to immediately and effectively apply what they learn directly to their own real world situations.

Key Focus Areas

Manage GPRS Partners

In the GPRS environment, telecoms professionals must develop relations with ISP providers and other bulk IP access vendors. Moreover, data roaming creates its own complex web of partner relationships as well. To be successful with mobile date, telecoms must have precise management over these partnerships and agreements. The GPRS Hammerhead focuses on how to manage cost and margins around GPRS partners, and how to assure the profitability of your data roaming partnerships.

SGSN, GGSN, APN, EIR and AUC

The mobile data business brings with it its own vocabulary, keyword and acronyms, and the vast majority of GRPS operations personnel have only one way to learn it, by trial and error. Through this program, learn the names and functions for each component involved in the delivery of GPRS data to customers.

Master IP Service Delivery

Many telco's fail to realize that when they offer GPRS they have actually become just another ISP. Unfortunately, the internet business model is not as simple or well managed as the circuit voice business, so many RA professionals need to do some re-education and adjustment of their approach to GPRS. Learn the fundamentals of IP service delivery (Routers, Servers, AAA Servers, Radius Servers, Diameter Servers, Firewalls, Routers, BGW protocol, Internal clouds, External clouds), their importance to GPRS management, and how to keep up in the Internet game.

Secure GPRS Billing

Billing data in either a postpaid or prepaid environment adds a great deal of complexity and risk to the revenue stream. Through this program professional will develop billing models that fit the technologies, select the best billing models, and define the appropriate billing methods, tools and systems for cost effective controls and risk containment strategies for postpaid, prepaid, or radius based billing operations.

Build Market Strength in Mobile Data

As data services continue to explode in the market, it becomes more critical that individual telecom organizations find unique ways to create and provide data services. This program enables professionals to create marketing and market related controls to assure market share for GPRS products, manage the new product development process, protect against churn due to GPRS, and protect against cannibalization loss after deployment.

Protect Against New Generation Fraud Risks

This new generation of telecoms business has resulted in a new generation of fraud professionals. These experts often understand your partnerships, technology and vulnerabilities better than you do, and they are willing and able to hire the technical staff and international expertise to take advantage of the openings in your coverage. This course reviews the network elements of the GPRS environment and discusses the biggest hacking and fraud risks professionals are facing today.

The GPRS Hammer-Head Program

The GRAPA Hammer-Head program provides a process that makes it possible for people to quickly get up to speed on ALL ASPECTS of GPRS. The Hammer-Head certification program is based upon the GRAPA standards for revenue assurance and over four years of benchmarking and standard practices based information collected from telecoms around the world. This program provides a unique, credible and substantial support for professionals interested in safeguarding their telco's most valued assets - their revenue streams.

Course at a Glance

Objective: The objective of this program is to ensure that all of the parties involved in the management and protection of mobile data revenues understand their role and possess a clear framework and understanding of how they are to work with others to accomplish mutual objectives while assuring there are no gaps or missed vulnerabilities.

Certification: Students who successfully complete this course, the necessary pre-requisites, and the certification exams will earn their specialized Certification in Mobile Data: Billing, Pricing and Security. Additionally, students who have also successfully completed a GRAPA Practical Methods course will earn their Practitioner of Revenue Assurance Certification. Students must provide work experience, pass the three qualifying tests and attend all days of training in order to qualify.

Technology Focus: The focus for this curriculum is on the management and operation of a wireless telecommunications company (GSM, UMTS, GPRS) and the migration/implementation of GPRS products and services.

Who Should Attend: To be successful it is suggested that the following professionals who are involved in the running of the mobile data attend and certify. This includes:
- Revenue Assurance, fraud management, Internal Audit and risk management professionals who need an end-to-end understanding of how the mobile data operational and business environment works
- Telecoms professionals looking to verify that they understand and have put in place all of the industry standards controls against leakage and fraud in GPRS and mobile data
- Fraud professionals interested in understanding where and how fraud and hacking risk can occur in GPRS and what to do about it.

Mobile Data: Billing, Pricing & Security - Course Outline

DAY 1 - Morning	GPRS and the Role of RA • What is GPRS • GPRS Business models • Revenue Assurance Services for GPRS	**DAY 1 - Afternoon**	Assuring the GPRS-ISP • Introduction to the Internet • IP Architecture, Topology, and Operations • IP Business Modules • IP AAA • Revenue Streams and DMM
DAY 2 - Morning	Protecting Core GPRS Revenue Streams • Wireless Media Review • GSM & GPRS Architecture Review • GPRS Authentication & Authorization Assurance • GPRS Postpaid billing Assurance	**DAY 2 - Afternoon**	GPRS Billing & Roaming Controls • Prepaid Billing for GPRS • Radius Billing for GPRS • APN Configuration & Assurance • GSM Roaming Models • Roaming Signalling & Controls Protocols
DAY 3 - Morning	360º GPRS Environment Protection • Roaming Billing • Roaming Data Clearing • Roaming Financial Clearing • GPRS Roaming Architecture, Mapping & Topology Assurance	**DAY 3 - Afternoon**	Pricing, Profit & Marketing for GPRS • GPRS Pricing Models and Options • Calculating GPRS Margins • GPRS Pricing Management • GPRS Accounting Assurance • GPRS Partner Frauds and Controls • GPRS Internal and Hacking Frauds and Controls • GPRS Market Assessment and Controls

PART I: GPRS and the Role of RA

The GPRS Hammerhead begins with an introduction to the mobie data environment. We review exactly what GPRS is, where it came from and how it fits into the bigger picture of the telecoms technology migrations. We then focus on the key role revenue assurance plays in the GPRS space, and how to ensure that this revenue stream is leak-proof, fraud-proof, and profitable. Professionals will develop a keen understanding of just how important revenue is to the management and containment of risk this new data world. After a brief review of the GRAPA standards and principles for revenue assurance, we then focus on the different service classes -- revenue operations assurance, revenue accounting assurance, billing architecture design, margin protection, market protection, technology assurance -- that can be applied to GPRS, and the ways that RA teams support them.

Practical Applications

- Learn what is meant by GPRS, where it came from, and how it fits into the bigger picture of wireless data migration
- Optimize your current customer base and architecture to position your organization for future expansion to newer technologies and revenue streams
- Defend your organization from the major fraud, leakage, and margin-related threats faced by telcos using GPRS data technology
- Learn the key role that revenue assurance plays in the securing, assuring and profitability of the GPRS environment
- Understand the GPRS deployment process and the concomitant risks that the telco faces when making this migration

Key Concepts

 Key environmental characteristics of GPRS
 GPRS Business Models

 RA-GRC Stack for GPRS
 GPRS Service Classes for RA

PART II: Assuring the GPRS-ISP

For decades a majority of the people have seen the internet as a free technology that could revolutionize the way we do business. Well, the good news is that this is exactly what has happened. The great news is that with the internet world, there are hundreds of carriers, suppliers and other parties who are realizing that the internet represents BIG MONEY. But, with BIG MONEY comes big competition, big investment and a technological and a business model free for all. Ironically, many telcos fail to realize that when they offer GPRS they has actually become JUST ANOTHER ISP. Unfortunately, the internet business model is not as simple or well managed as the circuit voice business, so the RA professional needs to do some re-education and adjustment of their approach to GPRS. During this series of modules students will become familiar with the business, security and control of Internet products and services.

Practical Applications

- Learn the principles, tools, and case studies that show how RA adds value to GPRS & data migration.
- Use revenue assurance forensics, corrections & compliance to mitigate risk & assure the profitability of GPRS internet services.
  - Understand the key components of an internet "cloud," the way that it is built, managed and packaged as a service.
  - Differentiate between the many types of participating businesses that make up the Internet business environment and the roles they play in the market. This includes ISPs, Tier 1,2,3,4 carriers, transit carriers, access providers and the many different participants in complex "CLOUD and IMS" business models.
  - Review the participants in the delivery of public internet services to ISPs and end customers (corporate and consumer).

Key Concepts

 The GRAPA Domain Analysis Methodology and its use in the developing and running of GPRS revenue streams
 What is the internet & how it works

 The principle methods of securing internet access & tracking internet activity
 Methods for the authentication, authorization and accounting for internet activity

PART I: Protecting Core GPRS Revenue Streams

The first half of GPRS102 focuses on the architecture of the core GPRS environment. We will review customer equipment characteristics, radio support, authentication, authorization and accounting protections as the basics of how GPRS is secured. After an end-to-end review of the GPRS environment architecture (including the organization of BTS, BSC, SGSN, GGSN, AAA Server, HLR, VLR, Radius Server, APNs, IP addressing scheme applications, PDP context management and the GPRS Tunneling Protocol) we complete an in-depth analysis of authentication and authorization assurance for the GPRS network. The controls for the handset, SIM, HLR, AUC, IMSI, SGSN, GGSN, APN and IN will be considered. Finally the morning is concluded with a review of GPRS Postpaid Billing Assurance and the GRPA standard controls of the related domains.

Practical Applications
• Create Authentication, Authorization, and Accounting controls over your GPRS lines of business
• Understand how your organization provides wireless data to your customers
• Develop an end to end perspective of the architecture of a GPRS environment.
• Utilize the GRAPA standard controls for authentication, authorization, and accounting for your data network and systems
• Learn the meaning of wireless data environment components and understand why it's important for RA and to assure them
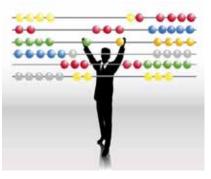• Understand the GPRS postpaid billing architecture and the GRAPA standard controls

Key Concepts
 Wireless Media Fundamentals
 GSM Architecture Fundamentals
 GPRS Architecture Fundamentals

 GRPS Authentication Principles
 GPRS Authorization Principles
 GPRS Postpaid Billing Assurance

PART II: Mobile Data Billing & Roaming Controls

We begin the second half of GPRS102 with the challenges unique to billing mobile data in a real time prepaid environment. Students will walk away understanding rating and wallet assurance and how traditional IN and Next Generation AAA Servers are integrated. After this, we do a similar review of Radius Billing for GPRS and differentiate between assurance methods for pure-radius versus hybrid billing systems. We then turn to APN assurance and configurations. Since one of the biggest sources of leakage and hacking in the GPRS environment occurs at this level, the assurance of APN configurations is a key RA and Fraud Control. Finally, we turn our attention to one of the biggest revenue sources for GPRS: data roaming. This, however, represents a large, added complexity to an already complicated business assurance universe. Through this afternoon we review the control protocols for SS7, ISUP, MAP, and CAP and familiarize students with the authentication, authorization, and accounting issues for roaming signaling.

Practical Applications
• Create a secure and profitable prepaid data roaming environment
• Utilize the GRAPA standard controls for prepaid and radius billing systems for GPRS
• Differentiate between the various aspects of the roaming business model, and how these alter how it is managed and assured
• Understand the different kinds of SS7 signaling commands, what they do, and how they are assured

Key Concepts
 GPRS Prepaid Billing Assurance and Controls
 GPRS Radius Billing Assurance and Controls
 GRPS APN Assurance
 Data Roaming Fundamentals

 Data Roaming Models
 Roaming Signaling: Authentication and Authorization
 Roaming Signaling: Accounting and Security

PART I: 360º GPRS Environment Protection

The mobile data environment is one of the most technically and commercially complicated environments that the telco must learn to manage. For this reason, the presence and effective implementation of revenue assurance controls is key to the profitability of this as a viable line of business. The morning of GPRS103 details how to ensure the protection of the data revenue streams from all perspectives - including roaming, topology and end to end billing management. We specifically review roaming data and financial clearing, how to work with the digital clearing house, GPRS architecture assurance, and GPRS topology assurance. At this point, students will be ready to put together all of the different pieces that makeup the GPRS architecture, revenue streams, business models and partnership models, and will develop a comprehensive strategy for the efficient coverage of all of the risks associated with mobile data.

Practical Applications
- Develop a comprehensive strategy for the efficient coverage of the risks associated with GPRS
- Utilize the GRAPA standard controls to manage your relationship with Digital Clearing House
- Learn the fundamentals, issues and controls associated with financial clearing for GPRS roaming revenues.
- Understand the most commonly experienced topologies for GPRS and the challenges in discovering them, documenting them, confirming them and assuring them.

Key Concepts
- Postpaid Roaming Billing Fundamentals
- Prepaid Roaming Billing Fundamentals
- Roaming Data clearing
- Roaming Financial Clearing

- GPRS Roaming Architecture Assurance
- GPRS Topology Mapping Methodology
- GPRS Topology Assurance

PART II: Pricing, Profit & Marketing for Mobile Data

Finally, we will turn our attention to the highest level and most critical of the mobile data controls activities. This final half day session will show students how the revenue assurance margin and market controls can be utilized to help management minimize the risks of loss due to margin miscalculation, as well as how to get the best pricing, product development . Focus will be put on the development of controls over pricing, margin calculation, marketing, new product development for mobile data products in order to help management do the best job possible of containing risk and guaranteeing profits. We will also use this time to review some of the most devastating frauds of the mobile data environment, including roaming partner frauds, external hacks, and internal fraud incidents. Students will learn from case studies and the GRAPA standard control methods to defend against these fraud issues.

Practical Applications
- Create effective controls around the measurement and monitoring of the margins generated (or to be generated) by mobile data GPRS technologies and service offerings
- Initiate effective and efficient controls over the GPRS new product, new deal and corporate deployment processes
- Understand pricing options and challenges in the competitive market of IP packet data services and learn the GRAPA standard approach to pricing model development
- Ensure that data revenues are being reported correctly and with integrity in your accounting systems
- Utilize GRAPA standard control methods & case studies to detect and deter GPRS hacking, internal frauds, and partner frauds
- Provide continuous forecasting information to top management about the profitability of mobile data and how to improve on the revenue realization process

Key Concepts
- Data Pricing Models Fundamentals
- Margin Principles for Mobile Data
- Pricing Mgmt for Mobile Data Products
- Data Accounting Assurance
- GPRS Partner Frauds

- GPRS Internal Frauds
- GPRS Hacking
- Mobile Data Market Assessment & Controls
- Segmentation of Mobile Data Customers
- Revenue Controls for Data

Why We are the Leaders in Training Telco Professionals Around the Globe

Join the leading Revenue Assurance focused training events. Featuring exclusive presentations, real-world examples of procedures, solutions, and strategies that have effectively reduced leakage and maximized profits for telcos around the world.

After providing training to hundreds of revenue assurance professionals around the globe, we are pleased to announce our improved course offerings.

☑ **Masters Certification** – GRAPA's highest and most prestigious certification that is attained after completing a rigorous and exhaustive training program whose extensive curriculum spans the broad and complex landscape of revenue assurance.

☑ **Depth of knowledge** – The topics and examples are "narrow and deep" rather than broad and vague, presenting you with focused, highly targeted information that adds real value.

☑ **Tailored content** – Training is adjusted to align the needs of the students to the available material. Students are asked to fill out "GRAPA Benchmark Surveys" to determine the level and nature of the training required. The survey results help us determine how well you know your own systems, and provide clues about what you need help with. The principles and practices taught are also applied to cable, satellite, wireless voice, SMS, MMS, IPTV, and MMDS with equal conviction, detail, and effectiveness.

☑ **Relevancy** – Class material is based on the foundations of GRAPA. GRAPA members from every geography, type of carrier, major type of technology, and carriers of all sizes review and approve these standard approaches. The material serves as the foundation for an industry standard approach that is applicable to everyone, and yet easily focused to the needs of specific sub-audiences.

☑ **Based on real-world situations** – The majority of the training is experience-based "standard practices" in revenue assurance, harvested from the many revenue assurance professionals who participate in "practices surveys," "strategy sessions," and other information-sharing events. Clear, specific deliverables are provided that apply to real-world situations. The material is never based on speculation, guesses, or unvalidated information.

☑ **Interactive** – The workshops are more than lecture sessions. RAA classes are participative and interactive and students are expected to proactively join in discussions, problem solve, and fill out benchmarks. Attendees have opportunity for much interaction with the instructor and other students. Lunch and breaks are devised to facilitate more intimate conversation.

☑ **Professional development** – Students master vocabulary needed for creating a sense of professional identity and opportunities with other like-minded people in the industry that share common goals and issues.

About GRAPA

The Revenue Assurance Academy (RAA) is the exclusive training organization of GRAPA. We have over 5000 registered members and has distributed more than 3500 copies of its 2009 standards book. By offering events that combine benchmark development, sharing of standard practices and approaches, as well as delivery of workshops, the Revenue Assurance Academy provides a unique and powerful venue for deployment of standard practices and rapid integration of those practices into the participating telco environments.

We have conducted our training programs for dozens of carriers and services providers around the world. Our workshops are offered in public venues (attended by delegates from many operators and services providers, which promotes the sharing of practices) as well as onsite for a private, more personalized and focused training for a company's staff.

Some of what makes our training so unique:

1. Based entirely on the GRAPA standards of professional revenue assurance practices.

2. Taught by Rob Mattison, the world's leading authority on the practice of revenue assurance in telecommunications, winner of many awards for his work in this area, author of The Revenue Assurance Standards--2009, The Revenue Assurance Handbook, and dozens of whitepapers.

3. Focused heavily on practical experience, not theory.

Visit www.ra-academy.org/RAA_info/testimonials.html to read some great reviews from students who have attended our training.

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Tentative 2012 Training Schedule:

18 - 22 March	Dubai, UAE
07 - 11 May	Cape Town, Africa
21 - 25 May	Chicago, USA
17 - 28 June	Dubai, UAE
22 - 26 October	Cape Town, Africa
11 - 22 November	Dubai, UAE
03 - 07 December	Orlando, USA

For the most up-to-date list of upcoming events please visit:
www.ra-academy.org/revenue_assurance_training/upcoming_events.html

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