

GPRS - General Packet Radio Service

A book by Regis J. "Bud" Bates

Review by Daniele Puccinelli

This book provides the reader with an application-oriented detailed illustration of how GPRS works. It appears to be intended as a guide for professional engineers who need a working knowledge of the subject matter. I would recommend it (as a reference text) only to people who are particularly interested in GPRS, as it is way too sectorial to be used as a manual of the basics of networking. Also, the sterile rapidity of presentation fails to rivet the reader's attention, as figures and acronyms often get in the way of concepts.

Chapter 1 - Introduction to GSM

Since GPRS is an overlay to GSM, the book begins with an overview of the latter. The architecture of a GSM network is described: the cellular organization, the base stations (BTS and BCS), the TRAU (TRanscoder and Adaptation Unit) and the Mobile Switching Centers. A few paragraphs cover signaling protocols, modulation techniques, and access methods.

Chapter 2 - GPRS Introduction

The basics of GPRS are rapidly explained; its history, standards and applications are presented, but the frantic concision of the paragraphs seems to betray an impersonal approach to the material.

Chapter 3 - System Architecture

After an expeditious listing of the architectural novelties, some emphasis is placed on data routing and the distinction between physical and logical channel is introduced. Just like chapter 2, this chapter boils down to a barren stream of numbers and acronyms and offers a scarce attention to the illustration of basic principles.

Chapter 4 - Function of GPRS elements

The impact on the base station subsystem is analyzed by looking at the Channel Codec Unit (CCU) and the Packet Control Unit (PCU), and other network elements are also dealt with. Quite informative is the section on Domain Name Systems (DNS) and Dynamic Host Configuration Protocol (DHCP).

Chapter 5 - Main GPRS Procedures

A very technical overview of mobility management, mobile-initiated attach/detach procedures and data transfer operations. A couple of short paragraphs also look at security issues.

Chapter 6 - Radio and MS-PCUSN Interfaces

A plethora of information tidbits mainly regarding the radio interface. A few paragraphs are devoted to the tractation of the Medium Access Control (MAC) layer and channel coding. The concept of QoS is finally introduced.

Chapter 7 - X.25, Internets, Intranets, and Ethernets

A noteworthy synopsis of a handful of basic networking concepts, with a useful summary of TCP/IP and UDP.

Chapter 8 - Mobile Station to SGSN Interface

A very technical section describing how the Logical Link Control layer links together the mobile station and the SGSN (Serving GPRS Support Node), which represents the door to wireless packet data network services for the former.

Chapter 9 - PCUSN-to-SGSN Interface (G_b)

Chapter 10 - SGSN-to-GGSN (G_n) and SGSN-to-GGSN (G_i Interface)

These two chapters are rather specific and would probably be used as a reference section only.

Chapter 11 - Future Enhancements and Services

A collection of telegraphic paragraphs which offer a preview of what is yet to come. Luckily enough, the book also offers a much needed list of acronyms.

Conclusive Remarks

The book would certainly be useful as a reference manual on GPRS; in addition, chapter 7 offers a nice synthesis of many networking principles. However, in general, the book seems to prefer fancy abbreviations and numbers rather than an understanding-oriented presentation of information. Many chapters are structured in such a way that overview paragraphs precede detailed descriptions; however, sometimes the detailed descriptions are partially a verbatim repetition

of the statements contained in the outlines. Finally, there appears to be no typographical distinction between main paragraphs and extension paragraphs within the various chapters, which significantly lessens the user-friendliness of the book. The greatest limit of this volume probably lies in its insufficient consideration of the big picture as opposed to an excessive focus on the details which is likely to overwhelm most readers, causing them to lose track of the core of the subject matter. Well, after all the ad on the last page suggesting companies to hire the audience-igniting book author seems to hint at the fact that Regis J. "Bud" Bates never meant to write a self-explanatory guide in the first place.