
Generic Requirements for the Interactive Billing Transaction Manager (IBTM)

Contents

Preface	Preface-1
1. Introduction.....	1-1
1.1 Motivation	1-3
1.2 Purpose and Scope	1-3
1.3 Target Audience	1-5
1.4 Document Presentation Style	1-5
1.5 Requirements Terminology.....	1-5
1.6 Requirement Labeling Conventions.....	1-6
1.6.1 Numbering of Requirement and Related Objects	1-6
1.6.2 Requirement, Conditional Requirement, and Objective Object Identification	1-7
2. Overview of Interactive Billing	2-1
2.1 Terminology	2-1
2.2 Interactive Billing Capabilities	2-2
2.3 Physical Architectures.....	2-4
2.3.1 Voice	2-4
2.3.2 Multimedia	2-9
3. Real-Time Pricing/Costing	3-1
3.1 Definitions.....	3-2
3.2 Pricing Administration Function.....	3-3
3.2.1 Rate Table and Price List Definition.....	3-3
3.2.2 Tax Table Definition	3-3
3.2.3 Pricing Rule Definition	3-4
3.2.3.1 Rating Rules.....	3-4
3.2.3.1.1 Content of Rating Rules.....	3-4
3.2.3.1.2 Properties of Rating Rules	3-8
3.2.3.2 Discounting Rules.....	3-11
3.2.3.2.1 Content of Discounting Rules.....	3-11
3.2.3.2.2 Properties of Discounting Rules	3-13
3.2.4 Establishment of Rounding Procedures	3-15
3.2.5 Establishment of Rule Conflict Resolution Procedures	3-16
3.2.6 Establishment of Procedures for Applying Multiple Discounts	3-18
3.2.7 Editing of Pricing Rules	3-20
3.3 Profile Administration Function	3-20
3.4 Offering Administration Function.....	3-21

3.5	Real-Time Pricing Calculation Function	3-22
3.5.1	Acquisition of Necessary Information	3-22
3.5.2	Rule Handling	3-23
3.5.3	Real-Time Pricing Processing.....	3-25
3.5.3.1	Base Price/Rate Determination.....	3-25
3.5.3.2	Price/Rate-Based Discount Determination	3-27
3.5.3.3	Application of Rounding Procedures.....	3-28
3.5.4	Outputting of Real-Time Pricing Calculation Results	3-28
3.6	Real-Time Costing Calculation Function.....	3-29
3.6.1	Acquisition of Necessary Information	3-29
3.6.2	Real-Time Costing Processing.....	3-30
3.6.2.1	Rating of Service Event Usage Information	3-30
3.6.2.2	Cost-Based Discount Determination	3-31
3.6.2.3	Application of Taxes.....	3-32
3.6.2.4	Application of Rounding Procedures.....	3-32
3.6.3	Outputting of Real-Time Costing Calculation Results	3-33
4.	Usage Control	4-1
4.1	Usage Control Administration Function	4-2
4.2	Profile Administration Function	4-3
4.3	Pre-Event Authorization Function	4-6
4.3.1	Types of Limits	4-7
4.3.2	Acquisition of Necessary Information	4-7
4.3.3	Determining Authorization	4-8
4.3.4	Reaching of Budget and Credit Limits	4-9
4.3.5	Outputting of Pre-Event Authorization Results	4-12
4.4	Usage Metering Function.....	4-12
4.4.1	Acquisition of Necessary Information	4-13
4.4.2	Usage Metering Processing.....	4-13
4.4.3	Outputting of Usage Metering Results.....	4-13
4.5	Usage Monitoring Function	4-14
4.5.1	Acquisition of Necessary Information	4-14
4.5.2	Dynamic Establishment of Service Event Budget Limits.....	4-15
4.5.3	Dynamic Establishment of Service Event Credit Limits	4-16
4.5.4	Derivation of Usage Allowance	4-17
4.5.5	Usage Monitoring Processing	4-18
4.5.6	Reaching of Budget and Credit Limits	4-18
4.5.7	Outputting of Usage Monitoring Results	4-18
4.6	Purchase Verification Function.....	4-19
4.6.1	Acquisition of Necessary Information	4-19
4.6.2	Verification of Purchase.....	4-20
4.6.3	Outputting of Purchase Verification Results	4-21
5.	Interactive Payment.....	5-1
5.1	Payment Administration Function	5-2

5.2	Profile Administration Function	5-4
5.3	Interactive Payment Function	5-5
5.3.1	Acquisition of Necessary Information	5-5
5.3.2	Offering Payment Methods	5-6
5.3.2.1	Supported Payment Methods	5-6
5.3.2.2	Payment Method Request	5-7
5.3.3	Payment Method Decision by Consumer	5-9
5.3.3.1	Selection Decision Response	5-9
5.3.3.2	Cancel Transaction Request - Consumer Service Functionality	5-9
5.3.3.3	Cancel Transaction - Time-out	5-10
5.3.4	Charge Authorization Request	5-10
5.3.5	Charge Authorization Response	5-11
5.3.5.1	Charge Authorized	5-11
5.3.5.2	Authorization Denied	5-12
5.3.5.3	Authorization Time-out	5-13
5.3.6	Authorization Notification	5-14
5.3.7	Interactive Payment Receipts	5-14
5.3.8	Outputting of Interactive Payment Results	5-15
6.	Billing Transaction Management	6-1
6.1	Billing Transaction Management Function	6-2
6.2	Information Correlation Function	6-6
6.3	Usage History Administration Function	6-6
6.4	Usage History Processing Function	6-7
6.5	Information Formatting Function	6-8
7.	Repositories	7-1
7.1	Pricing Repository	7-1
7.2	Profile Repository	7-1
7.3	Usage History Repository	7-2
7.4	Payment Repository	7-3
7.5	Internal Account Repository	7-3
7.6	Transaction Repository	7-4
7.7	Offering Repository	7-5
8.	IBTM Network Interface Requirements	8-1
9.	Data Processing Support Requirements	9-1
10.	Operational Environment Requirements	10-1
	Appendix A: Rule Conflict Resolution Procedures	A-1
A.1	Rating Rule Conflict Resolution Procedures	A-1
A.2	Discounting Rule Conflict Resolution Procedures	A-2
	References	References-1

Glossary	Glossary-1
Requirement-Object List	ROL-1
Requirement-Object Index	ROI-1

List of Figures

Figure 2-1.	Potential Physical Architecture for Voice Service Environments	2-8
Figure 2-2.	Potential Physical Architecture for Multimedia Service Environments	2-11