

### CONTENTS

FOREWORD .....	5
ORIGINAL UPNP DOCUMENTS (informative) .....	7
<b>1. Overview and Scope .....</b>	<b>9</b>
<b>2. Service Modeling Definitions .....</b>	<b>10</b>
2.1. ServiceType .....	10
2.2. State Variables .....	11
2.2.1. ConnectionType .....	15
2.2.2. PossibleConnectionTypes .....	15
2.2.3. ConnectionStatus .....	15
2.2.4. Uptime .....	15
2.2.5. UpstreamMaxBitRate .....	15
2.2.6. DownstreamMaxBitRate .....	15
2.2.7. LastConnectionError .....	15
2.2.8. AutoDisconnectTime .....	15
2.2.9. IdleDisconnectTime .....	15
2.2.10. WarnDisconnectDelay .....	16
2.2.11. RSIPAvailable .....	16
2.2.12. NATEnabled .....	16
2.2.13. UserName .....	16
2.2.14. Password .....	16
2.2.15. PPPEncryptionProtocol .....	16
2.2.16. PPPCompressionProtocol .....	16
2.2.17. PPPAuthenticationProtocol .....	16
2.2.18. ExternalIPAddress .....	16
2.2.19. PortMappingNumberOfEntries .....	17
2.2.20. PortMappingEnabled .....	17
2.2.21. PortMappingLeaseDuration .....	17
2.2.22. RemoteHost .....	17
2.2.23. ExternalPort .....	17
2.2.24. InternalPort .....	17
2.2.25. PortMappingProtocol .....	17
2.2.26. InternalClient .....	17
2.2.27. PortMappingDescription .....	18
2.2.28. Relationships Between State Variables .....	19
2.3. Eventing and Moderation .....	20
2.3.1. Event Model .....	20
2.4. Actions .....	21
2.4.1. SetConnectionType .....	22
2.4.2. GetConnectionTypeInfo .....	22
2.4.3. ConfigureConnection .....	23
2.4.4. RequestConnection .....	23
2.4.5. RequestTermination .....	24
2.4.6. ForceTermination .....	25
2.4.7. SetAutoDisconnectTime .....	25
2.4.8. SetIdleDisconnectTime .....	26
2.4.9. SetWarnDisconnectDelay .....	26
2.4.10. GetStatusInfo .....	27
2.4.11. GetLinkLayerMaxBitRates .....	27
2.4.12. GetPPPEncryptionProtocol .....	28
2.4.13. GetPPPCompressionProtocol .....	28
2.4.14. GetPPPAuthenticationProtocol .....	28
2.4.15. GetUserName .....	29
2.4.16. GetPassword .....	29
2.4.17. GetAutoDisconnectTime .....	30
2.4.18. GetIdleDisconnectTime .....	30

2.4.19.	GetWarnDisconnectDelay .....	31
2.4.20.	GetNATRSIPStatus .....	31
2.4.21.	GetGenericPortMappingEntry .....	32
2.4.22.	GetSpecificPortMappingEntry .....	33
2.4.23.	AddPortMapping .....	33
2.4.24.	DeletePortMapping .....	35
2.4.25.	GetExternalIPAddress .....	35
2.4.26.	Non-Standard Actions Implemented by a UPnP Vendor .....	36
2.4.27.	Relationships Between Actions .....	36
2.4.28.	Common Error Codes .....	36
2.5.	Theory of Operation .....	37
2.5.1.	Connection Initiation .....	38
2.5.2.	Connection Termination .....	40
2.5.3.	Connection Scenarios .....	41
2.5.4.	Non-UPnP compliant clients .....	42
2.5.5.	VPN connections .....	42
<b>3.</b>	<b>XML Service Description .....</b>	<b>44</b>
<b>4.</b>	<b>Test .....</b>	<b>53</b>

## LIST OF TABLES

Table 1: State Variables .....	11
Table 1.1: AllowedValueList for PossibleConnectionTypes .....	12
Table 1.2: AllowedValueList for ConnectionStatus .....	13
Table 1.3: AllowedValueList for LastConnectionError .....	14
Table 1.4: AllowedValueList for PortMappingProtocol .....	14
Table 2: Event Moderation.....	20
Table 3: Actions .....	21
Table 4: Arguments for SetConnectionType .....	22
Table 5: Arguments for GetConnectionTypeInfo .....	22
Table 6: Arguments for ConfigureConnection.....	23
Table 7: Arguments for SetAutoDisconnectTime .....	25
Table 8: Arguments for SetIdleDisconnectTime .....	26
Table 9: Arguments for SetWarnDisconnectDelay .....	26
Table 10: Arguments for GetStatusInfo.....	27
Table 11: Arguments for GetLinkLayerMaxBitRates .....	27
Table 12: Arguments for GetPPPEncryptionProtocol.....	28
Table 13: Arguments for GetPPPCompressionProtocol.....	28
Table 14: Arguments for GetPPPAAuthenticationProtocol .....	29
Table 15: Arguments for GetUser Name .....	29
Table 16: Arguments for GetPassword.....	29
Table 17: Arguments for GetAutoDisconnectTime .....	30
Table 18: Arguments for GetIdleDisconnectTime .....	30
Table 19: Arguments for GetWarnDisconnectDelay .....	31
Table 20: Arguments for GetNATRSIPStatus .....	31
Table 21: Arguments for GetGenericPortMappingEntry .....	32
Table 22: Arguments for GetSpecificPortMappingEntry .....	33
Table 23: Arguments for AddPortMapping.....	34
Table 24: Arguments for DeletePortMapping.....	35
Table 25: Arguments for GetExternalIPAddress.....	35
Table 26: Common Error Codes.....	36