

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>(51) International Patent Classification <sup>6</sup> :</b><br><b>H04M</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>A2</b> | <b>(11) International Publication Number:</b> <b>WO 99/35803</b><br><b>(43) International Publication Date:</b> 15 July 1999 (15.07.99)                                                                                                                           |
| <b>(21) International Application Number:</b> PCT/US99/00125<br><b>(22) International Filing Date:</b> 6 January 1999 (06.01.99)<br><br><b>(30) Priority Data:</b><br>09/003,977 7 January 1998 (07.01.98) US<br><br><b>(71) Applicant:</b> MCI WORLDCOM, INC. [US/US]; 515 East Amite Street, Jackson, MS 39201 (US).<br><br><b>(72) Inventors:</b> DENDI, Ranga, R.; 1709 Danube Lane, Plano, TX 75075 (US). SHERMAN, Frederick, A.; 2429 Bent Brook Drive, Mesquite, TX 75181 (US). MORGAN, Timothy, A.; 1828 Harbour Oaks Drive, Snellville, GA 30078 (US). LEONARD, Robert, Gary; 2620 Teakwood Lane, PLano, TX 75075 (US). BOND, Duke; 109 Ventura Court, Allen, TX 75013 (US).<br><br><b>(74) Agent:</b> GROLZ, Edward, W.; Scully, Scott, Murphy & Presser, 400 Garden City Plaza, Garden City, NY 11530 (US).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           | <b>(81) Designated States:</b> CA, JP, MX, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).<br><br><b>Published</b><br><i>Without international search report and to be republished upon receipt of that report.</i> |
| <b>(54) Title:</b> PROGRAMMABLE GATEWAY FOR A VIRTUAL BEARER CHANNEL PLATFORM<br><br><b>(57) Abstract</b><br><br>A programmable gateway for processing protocol conversion for a virtual bearer channel platform. The platform includes a plurality of transaction processing units (TPUs). Each TPU processes service requests transmitted by a caller or transmits service requests to a destination called party. The platform has a distribution network that interfaces with the TPUs and acts as a shared bus between the TPUs. The platform receives and transmits communications with a communications network over bearer channels of a high bandwidth pipe. A cross-connecting controller multiplexes the signals coming into the platform over the bearer channels from the distribution network, and also demultiplexes signals going out over the bearer channels from the distribution network. A resource manager provides a centralized control for the allocation of bandwidth to the transaction processing units. The resource manager allocates available bearer channels for the connections with the communications network, and also allocates available time slots in the distribution network to the TPUs. The gateway functions as a programmable protocol converter handling all the signaling functions of the platform. It acts as a conduit between the resource manager and the communications network. It converts incoming signaling messages into an internal protocol used by the resource manager. Likewise, it converts internal messages from the resource manager into signaling messages for transmission over the communications network. |           |                                                                                                                                                                                                                                                                   |