



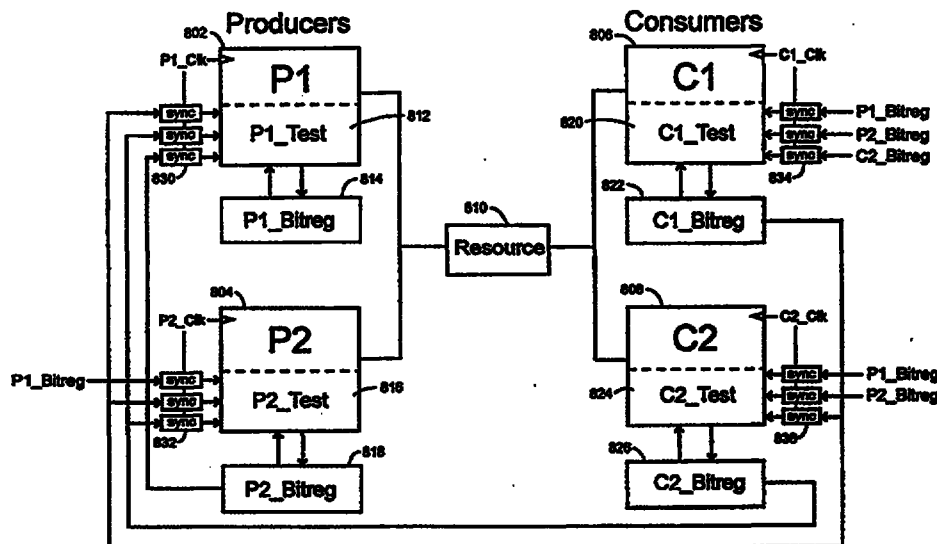
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(21) International Application Number: PCT/US96/18226 (22) International Filing Date: 13 November 1996 (13.11.96) (30) Priority Data: 08/568,149 7 December 1995 (07.12.95) US (71) Applicant: AST RESEARCH, INC. [US/US]; 16215 Alton Parkway, Irvine, CA 92718 (US). <i>See PF14</i> (72) Inventor: CHENG, Marco, Y., C.; 9624 Gardenia Avenue, Fountain Valley, CA 92708 (US). (74) Agent: SIMPSON, Andrew, H.; Knobbe, Martens, Olson & Bear, 16th floor, 620 Newport Center Drive, Newport Beach, CA 92660 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published With international search report.

(54) Title: METHOD AND APPARATUS FOR DETERMINING THE STATUS OF A SHARED RESOURCE



$$P1_Test = P1_Bitreg \oplus (P2_Bitreg \uparrow P1) \oplus (C1_Bitreg \uparrow P1) \oplus (C2_Bitreg \uparrow P1)$$

(57) Abstract

A method and apparatus for determining the status of a resource (810) shared by multiple subsystems (802, 804, 806, 808) operating in mutually asynchronous clock domains apply a one-bit counter (814, 818, 822, 826) for each subsystem and synchronize the value of each such bit counter with all asynchronous clocks. Each subsystem exclusive-ORs the value of each bit counter (814, 818, 822, 826) to generate an availability status for the shared resource (810). System delays caused by synchronization are minimized, and circuit design and proof of correctness at the design stage are simplified.

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