

Exhibit 7



US007917680B2

(12) **United States Patent
Locker**

(10) **Patent No.: US 7,917,680 B2**
(45) **Date of Patent: Mar. 29, 2011**

(54) **PERFORMANCE BASED PACKET ORDERING IN A PCI EXPRESS BUS**

(58) **Field of Classification Search** 710/310–315;
711/147, 154
See application file for complete search history.

(75) Inventor: **Kevin Locker**, Scottsdale, AZ (US)

(56) **References Cited**

(73) Assignee: **NXP B.V.**, Eindhoven (NL)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 372 days.

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(21) Appl. No.: **11/719,532**

CN 1531282 A 9/2004

(22) PCT Filed: **Nov. 18, 2005**

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(86) PCT No.: **PCT/IB2005/053821**
§ 371 (c)(1),
(2), (4) Date: **May 16, 2007**

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Office Action from Chinese Patent Appln. No. 200580039435.6 (Sep. 11, 2009), w/ English transl.

(87) PCT Pub. No.: **WO2006/054266**
PCT Pub. Date: **May 26, 2006**

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Primary Examiner — Clifford H Knoll

(65) **Prior Publication Data**
US 2009/0144478 A1 Jun. 4, 2009

(57) **ABSTRACT**

Related U.S. Application Data

(60) Provisional application No. 60/629,206, filed on Nov. 18, 2004.

A communications arrangement is implemented for packet data communications control. According to an example embodiment of the present invention, a communications arrangement (100), such as a PCI Express type arrangement, carries out separate arbitration functions (112, 116, 117, 118) for ordering packet data. One of the arbitration functions (112) orders the packet data in accordance with protocol standards (e.g., to meet PCI Express standards when implemented with a PCI Express system). The other arbitration function (116, 117, 118) orders the packet data in accordance with performance standards while maintaining compliance with the protocol standards.

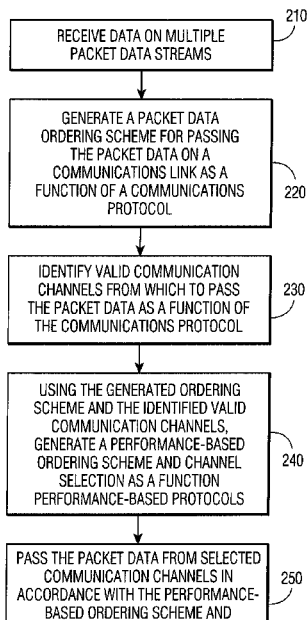
(30) **Foreign Application Priority Data**

Nov. 18, 2005 (WO) PCT/IB05/053821

(51) **Int. Cl.**
G06F 13/36 (2006.01)

(52) **U.S. Cl.** 710/311; 711/154

20 Claims, 4 Drawing Sheets



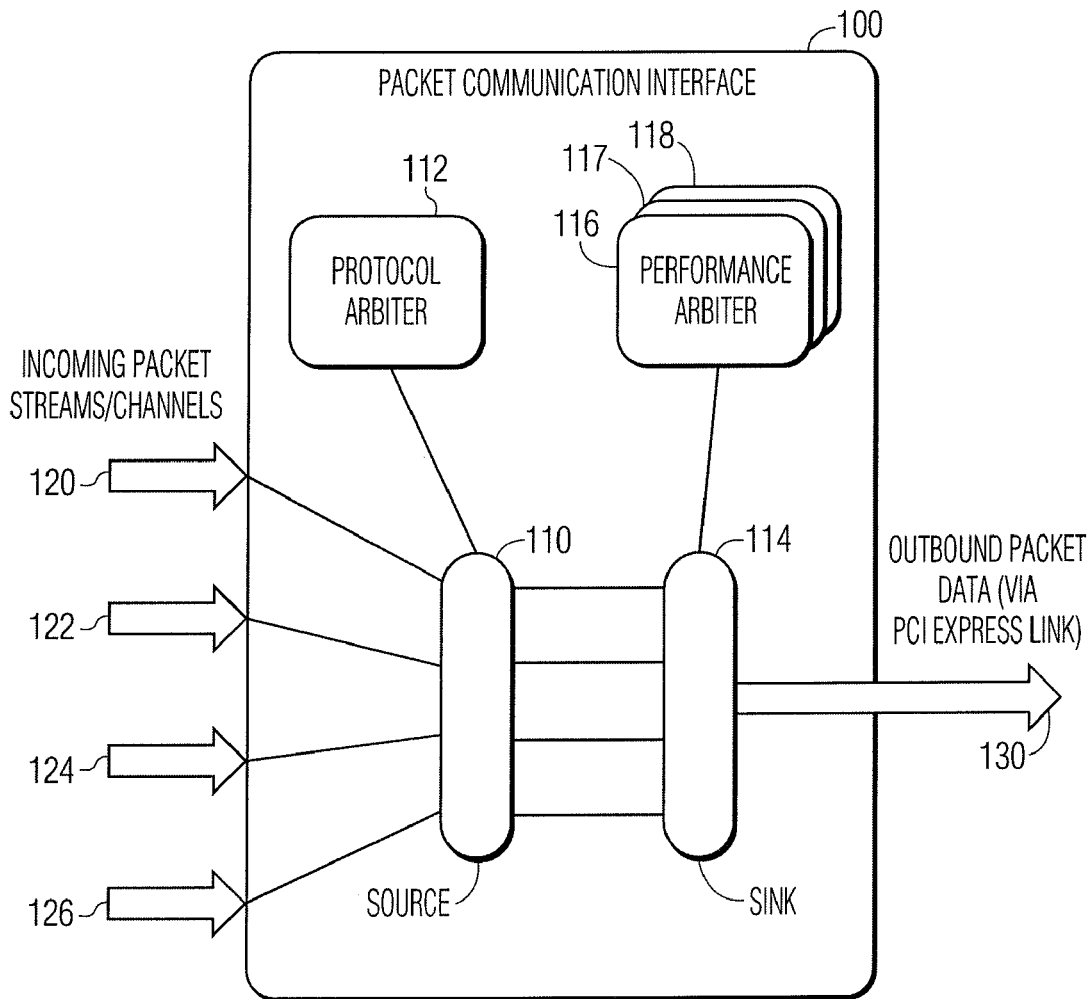


FIG. 1A

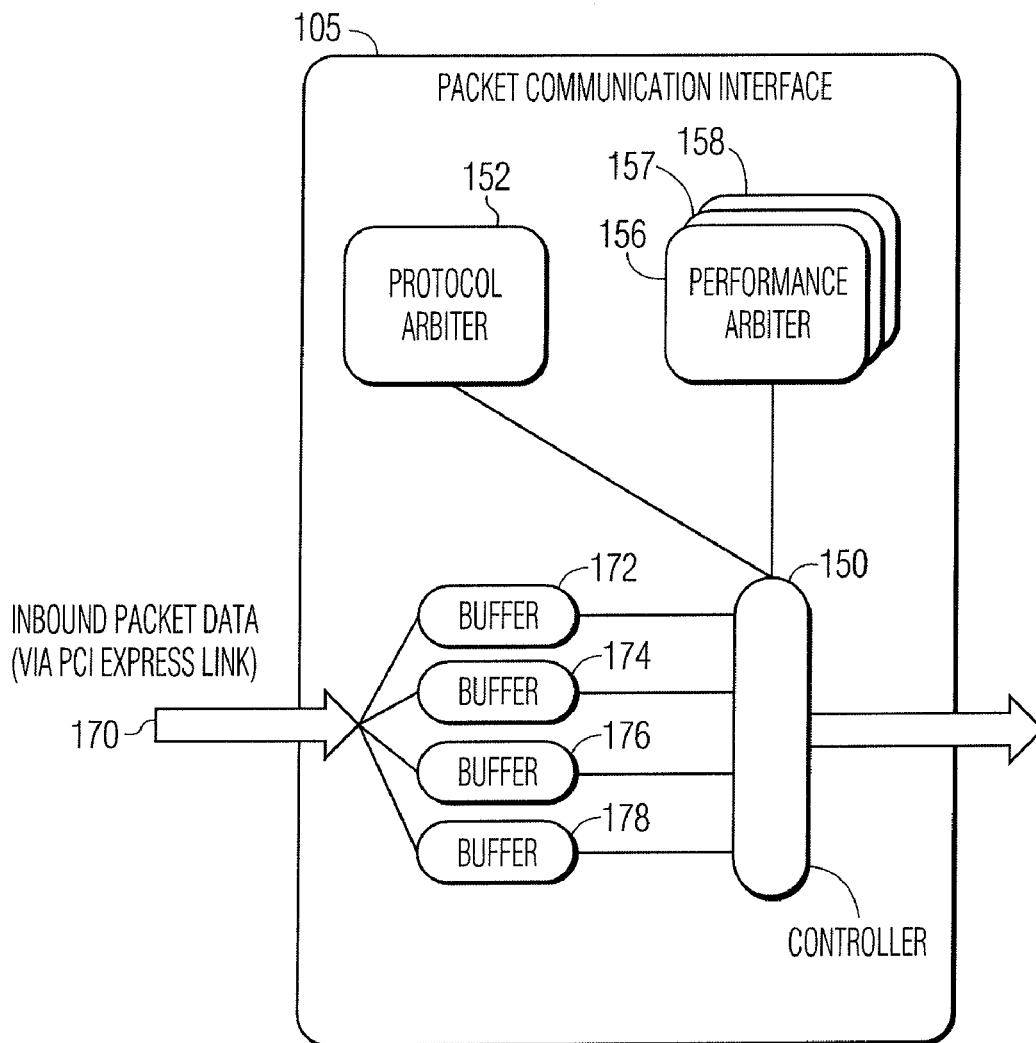


FIG. 1B

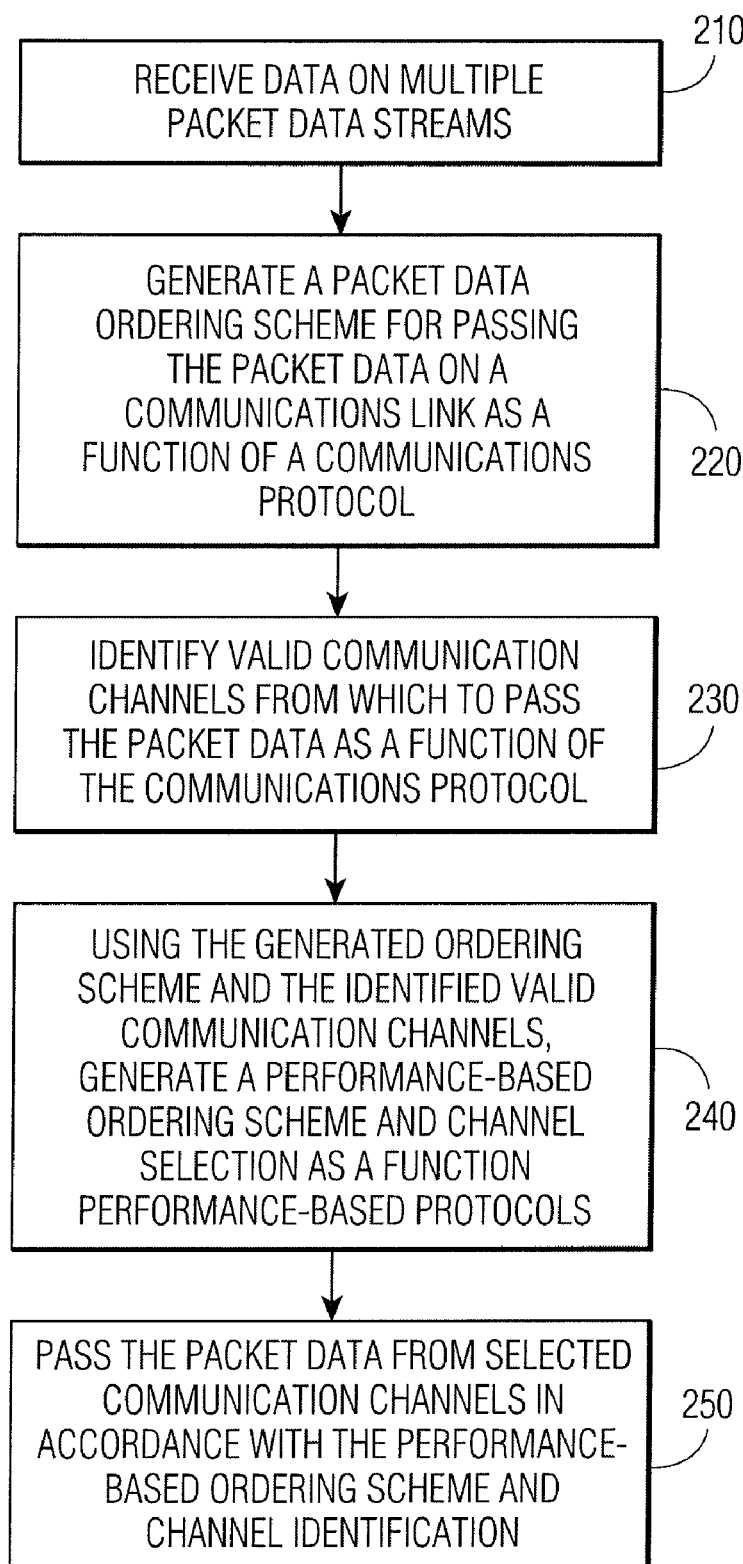


FIG. 2

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