

(12) **United States Patent**
Ito et al.

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(54) **SECURITY METHOD AND SYSTEM FOR STORAGE SUBSYSTEM**

2002/0029319 A1 * 3/2002 Robbins et al. 711/114

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EP 0 881 560 A2 2/1998
 JP 10-333839 12/1998

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* cited by examiner

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(57) **ABSTRACT**

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According to the present invention, techniques for performing security functions in computer storage subsystems in order to prevent illegal access by the host computers according to logical unit (LU) identity are provided. In representative embodiments management tables can be used to disclose the Logical Unit in the storage subsystem to the host computers in accordance with the users operational needs. In a specific embodiment, accessibility to a storage subsystem resource can be decided when an Inquiry Command is received, providing systems and apparatus wherein there is no further need to repeatedly determine accessibility for subsequent accesses to the Logical Unit. Many such embodiments can maintain relatively high performance, while providing robust security for each LU.

(30) **Foreign Application Priority Data**

Jan. 14, 2000 (JP) 2000-010115

(51) **Int. Cl.**⁷ **G06F 17/30**

(52) **U.S. Cl.** **707/9; 707/10**

(58) **Field of Search** 711/153, 100, 711/152, 5, 114; 345/418; 707/9, 10; 703/23; 713/201

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,260,120 B1 * 7/2001 Blumenau et al. 711/152
 6,295,575 B1 * 9/2001 Blumenau et al. 711/5

38 Claims, 23 Drawing Sheets

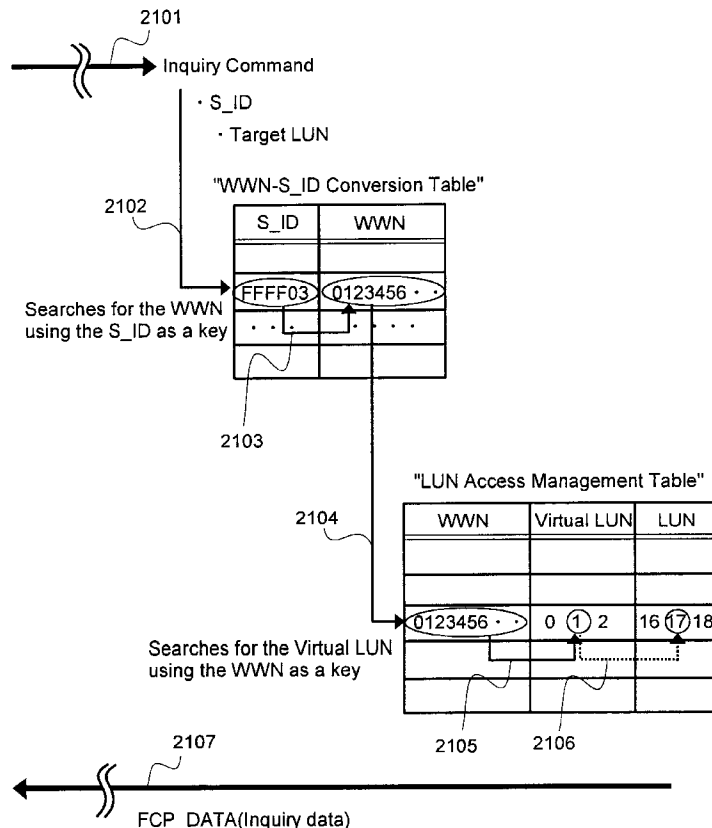


FIG. 1

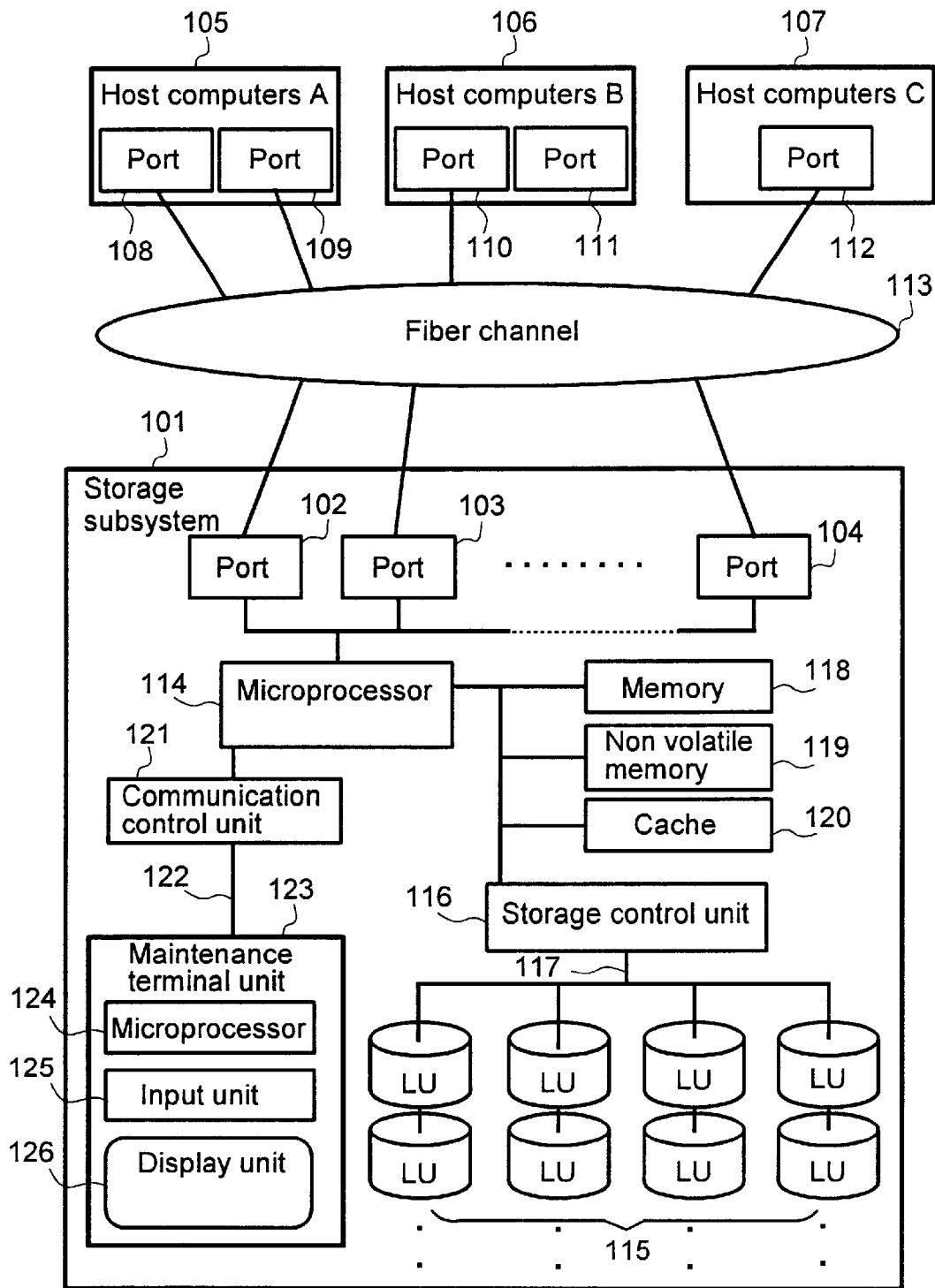


FIG.2

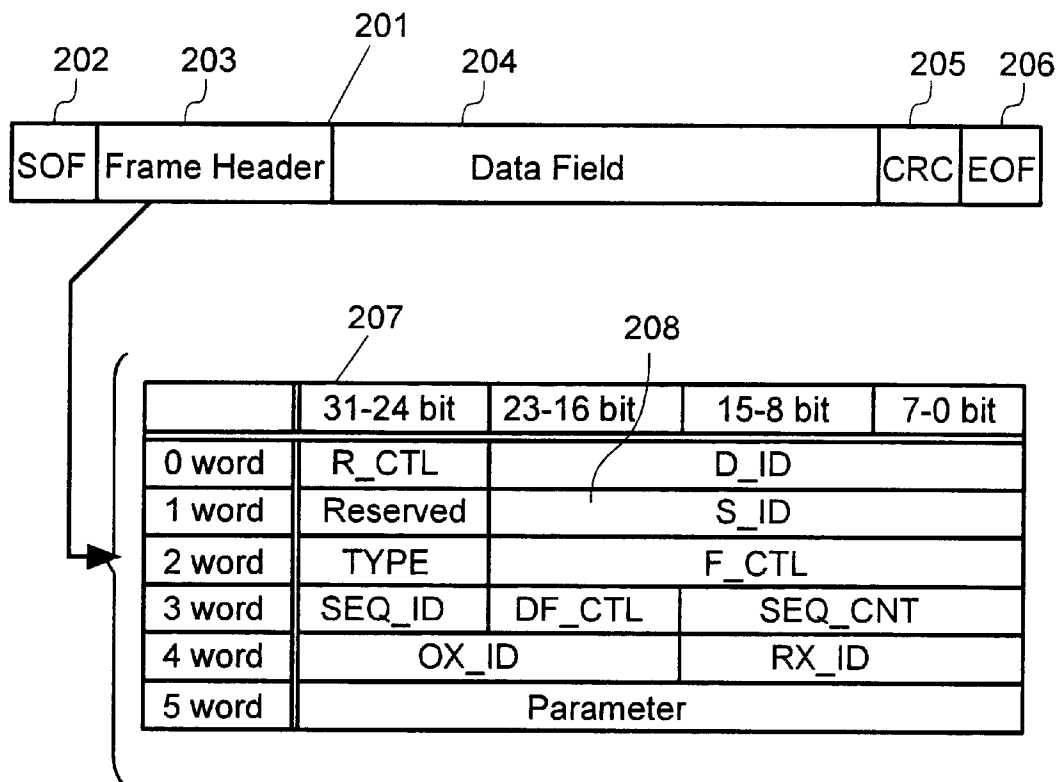


FIG.3

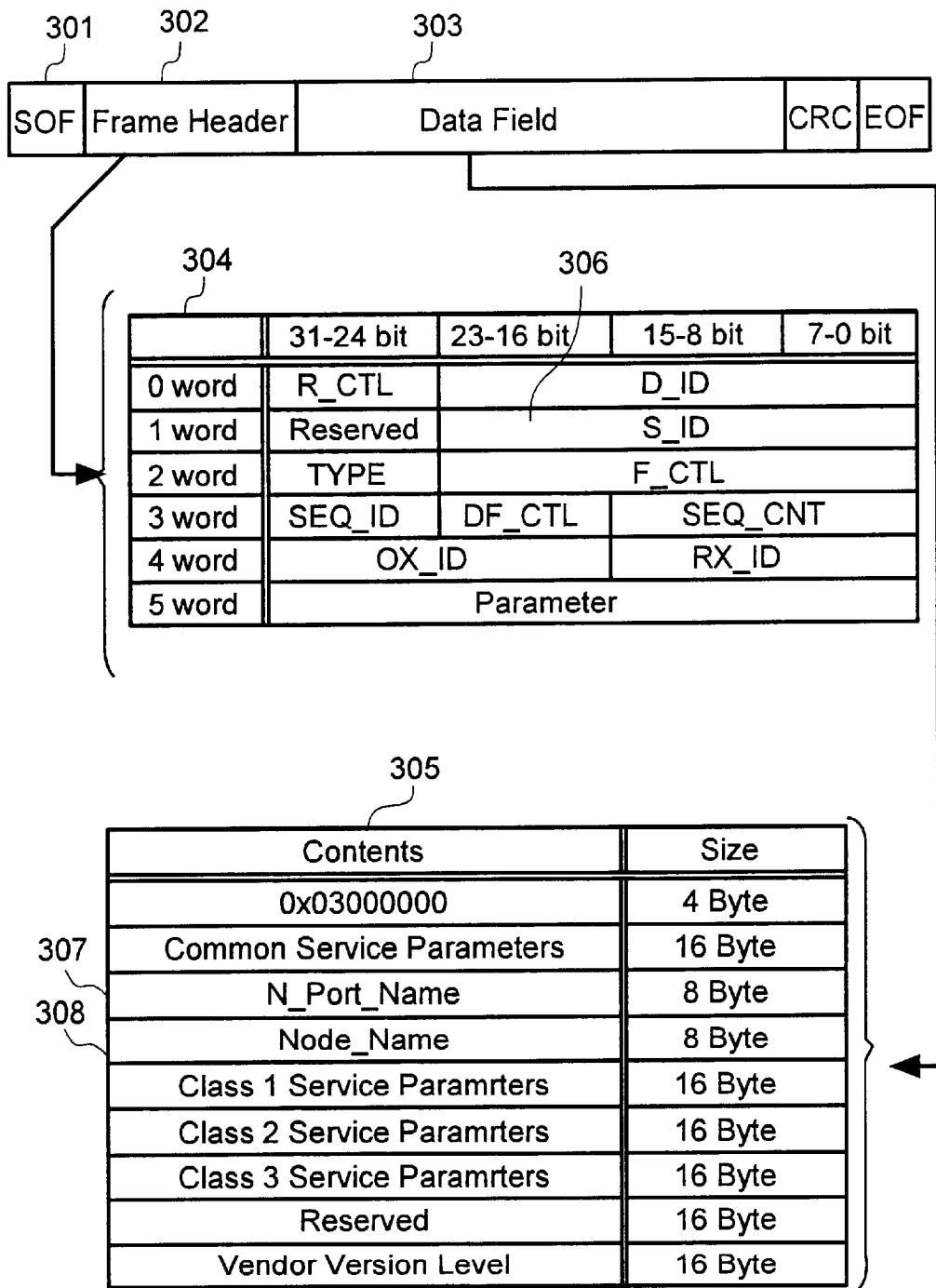
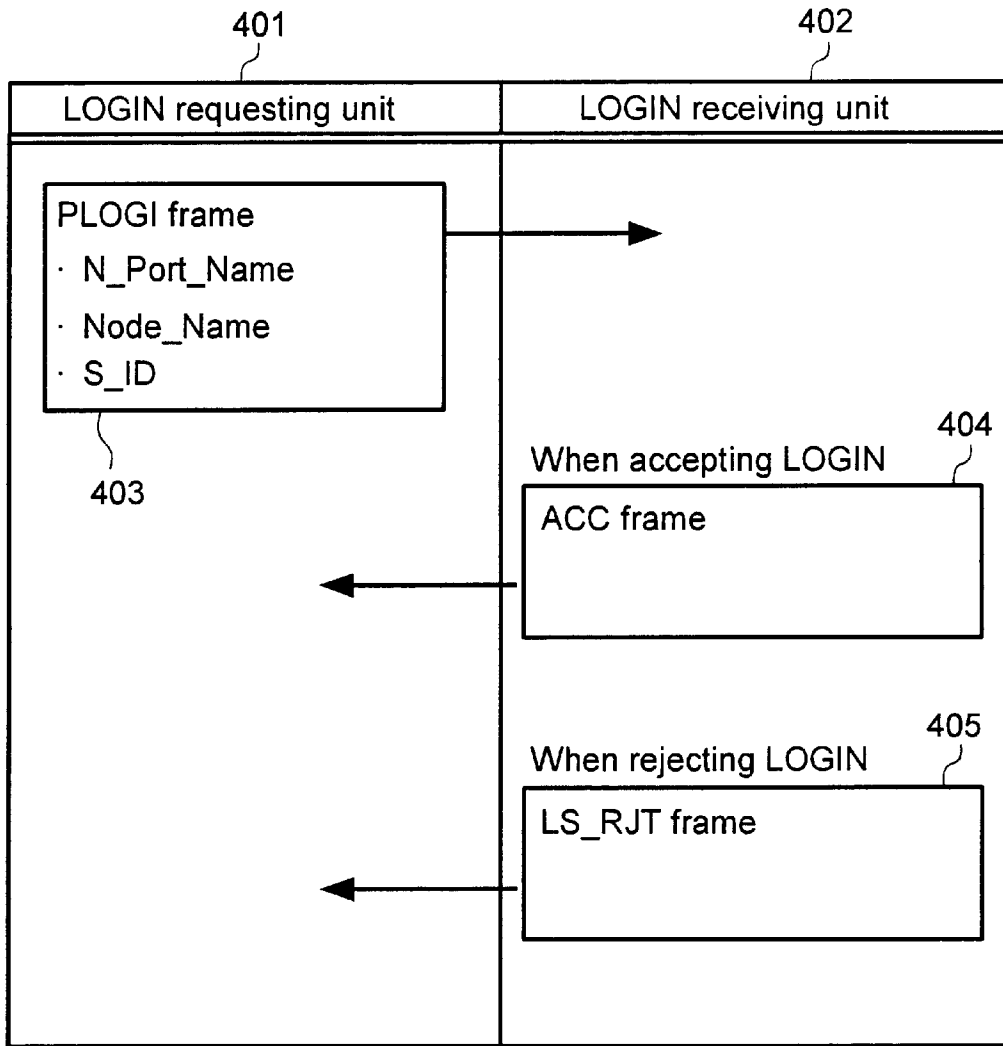


FIG.4



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