

指標遞轉環境下之HLR復原機制

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摘要

本文主要是探討在個人通信服務(PCS)網路上，利用指標遞轉方法 (POINTER FORWARDING SCHEME) 來完成手機位置管理。在指標遞轉環境下，我們提出一過時指標回收策略，使得HLR故障後的復原程序得以順利完成，這個HLR復原方法並不佔用大量無線通訊的頻寬，並且能把復原期限限制在最小。

關鍵詞：個人通訊服務，位置管理，指標遞轉策略，HLR復原

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參考文獻

- [1] S. MOHAN AND R. JAIN, "TWO USER LOCATION STRATEGIES FOR PERSONAL COMMUNICATION SERVICES", IEEE PERSONAL COMMUNICATION, PP. 42-50, FIRST QUART 1994.
- [2] Y. B. LIN, "DETERMINING THE USER LOCATION FOR PERSONAL COMMUNICATIONS SERVICES NETWORKS", IEEE TRANSACTIONS, VEHICULAR TECH., VOL. 43, NO. 3, PP. 466-73, AUG. 1994.
- [3] T. X. BROWN AND S. MOHAN, "MOBILITY MANAGEMENT FOR PERSONAL COMMUNICATIONS SYSTEMS" IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, PP.269-278,MAY 1997.
- [4] B. R. BADRINATH ET. AL. "LOCATION STRATEGIES FOR PERSONAL COMMUNICATION NETWORKS", PROC. OF THE IEEE GLOBECOM WORKSHOP ON NETWORKING OF PERSONAL COMMUNICATION, PP.292- 299, DECEMBER 1993.
- [5] H. XIE, S. TABBANE AND D. GOODMAN, "DYNAMIC LOCATION AREA MANAGEMENT AND PERFORMANCE ANALYSIS", PROC. IEEE VTC '93, PP. 536-39, MAY 1993.
- [6] F. AKYILDIZ AND J. S. HO, "ON LOCATION MANAGEMENT FOR PERSONAL COMMUNICATIONS NETWORK -S", IEEE COMMUNICATIONS MAGAZINE, PP.138-145, SEPT. 1996.
- [7] J. I. YU, "IS-41 FOR MOBILITY MANAGEMENT", UNIVERSITY PERSONAL COMMUNICATIONS, 1992. ICUPC '92 PROCEEDINGS, 1ST INTERNATIONAL CONFERENCE ON, PP.06.03/1-06.03/5, 1992.
- [8] Y. B. LIN, "FAILURE RESTORATION OF MOBILITY DATABASES FOR PERSONAL COMMUNICATION NETWORKS", ACM/BALTZER WIRELESS NETWORKS ,PP.365-372 1995.
- [9] S. C. CHEN, M. F. CHANG, Y. B. LIN, "FAULT TOLERANCE OF PCS MOBILITY DATABASES", PP. 542-547, 1997 IEEE.
- [10] D. R. WILSON, "SIGNALING SYSTEM NO.7, IS-41 AND CELLULAR TELEPHONY NETWORKING", PROC. IEEE, VOL 80, NO. 4, PP.652-54, APR. 1992.
- [11] M. MOULY AND M. B. PAUTET, THE GSM SYSTEM FOR MOBILE COMMUNICATIONS. PALAISEAU, FRANCE, 1992.
- [12] R. JAIN AND Y.B. LIN, "AN AUXILIARY USER LOCATION STRATEGY EMPLOYING FORWARDING POINTERS TO REDUCE NETWORK IMPACT OF PCS", ACM-JCM WIRELESS NETWORKS, VOL.2, PP.197-210, 1995.
- [13] K. L. SUE AND C. C. TSENG, "ONE-STEP POINTER FORWARDING STRATEGY FOR LOCATION TRACKING IN DISTRIBUTED HLR ENVIRONMENT", IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS , VOL. 15,NO. 8,PP.1455-1466, 1997.
- [14] Y. H. LAI, C. C. TSENG AND Y. B. LIN, "PERFORMANCE STUDY OF K-STEP POINTER FORWARDING STRATEGIES IN DISTRIBUTED HLR ENVIRONMENT ",DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING, NATIONAL CHIAO TUNG UNIVERSITY, MASTER THESIS, 1998.
- [15] YUGANG FANG, IMRICH CHLAMTAC AND HONG-BING FEI, "FAILURE RECOVERY OF HLR MOBILITY DATABASES AND PARAMETER OPTIMIZATION FOR PCS NETWORKS", JOURNAL OF PARALLEL AND DISTRIBUTED COMPUTING 60,

P431-450, 2000.

[16]GOVIND KRISHNAMURTHI, STEFANO CHESSA, AND ARUN K. SOMANI "FAST RECOVERY PROTOCOL FOR -DATABASE AND LINK FAILURES IN MOBILE NETWORKS", IEEE P32-39, 1998.

[17]R. E. STROM, S. YEMINI, "OPTIMISTIC RECOVERY IN DISTRIBUTED SYSTEMS", ACM TRANSACTIONS ON COMPUTERS, PP204-226, AUG, 1985.