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TO THE HONORABLE COMMISSIONER OF	PATENTS AND TRA	DEMARKS:								
SIR: Please record the enclosed original documents or copy thereof.										
a. Ramon C. W. Chea, Jr. (-23-6) b. P. Kingston Duffie c.	GNORS):									
Additional names of conveying parties enclose	d?	X 1	10	YES	0					
2. PARTY(ASSIGNEE) RECEIVING INTERES	ST:				12 mm					
NAME: Turnstone Systems, Inc. ADDRESS: 2220 Central Expressway Santa Clara, CA 95050		[V]	۰ -	lvee	09/9115 09/9115 07/23/0					
Additional names and addresses enclosed?		XN		YES	7 =					
NATURE OF CONVEYANCE: (Submit only one document for recordation–multiple copies of same Assignment signed by different inventors is one document)										
X Assignment of X Whole	Part interest	E	xecution o	date: Januar	y 28, 2000					
Change of name X Patent Applica	tion									
Security Merger Other:										
4. Execution date/s on Declaration (if filed herewith): January 28, 2000										
4.5 Appl/Pat Nos.: others on additional sheets enclosed?										
A, Pat. App. No/s Matter # 1.st inve Unassigned 0276087	nton if not in Item 1	B. Patent No(s)	13 julija 13 jul	inventor fin	otin item i					
Name and address of party to whom corres concerning document should be mailed:	pondence	6. NUMBER INVOLVED: Appins: 1 + Pats: 0 = TOTAL 1								
Pillsbury Madison & Sutro LLP 1100 New York Avenue N.W., 9 th Floor, East 7 Washington, D.C. 20005-3918	7. Amount of fee enclosed (Code 581): Above Total x \$40 = \$40.00									
5.5 ATTY DKT: 085638		If above fee is mis insufficiency to DE	sing or inad POSIT ACC	equate, charge COUNT NO. 03-	3975					
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STATEMENT AND SIGNATURE. To the b correct and any attached copy is a true copy or	est of my knowledge f the original docume	and belief, the for ent.	egoing in	formation is t	rue and					
Signature 10. Total pages including this cover sheet and document										
Atty.: Chang H. Kim, Reg. No. 42,77		uly 23, 2001	V/or	-						
Tel: (650) 233-4776 Fax: (650) 23	03-4040 A	tty./Sec: CH	K/cp							

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PATENT

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Please return recorded to: Plisbury Madison & Sutro LLP Ninth Floor, East Tower 1100 New York Avenue, N.W. Washington, D.C. 20005-3918

Received Jan-28-00 11:24am

Atty Dkt. 85638/0261869 Client Ref. TUR-002

ASSIGNMENT of U.S. Patent Application

WHEREAS, the undersigned, to wit: (1) Ramon C. W. Chea, Jr.; and (2) P. Kingston Duffie, (hereinafter collectively ASSIGNOR), have made an invention known as Docket No. 85638/0261869 and entitled, Battery Injection and Loop Supervision in DSL Environment, for which an application for Letters Patent of the United States was executed even date herewith and is about to be filed in the United States Patent and Trademark Office; and

WHEREAS, TURNSTONE SYSTEMS, INC., ASSIGNEE, a corporation duly organized and existing under the laws of the State of Delaware and having its principal office and place of business at 274 Ferguson Drive, Mountain View, California 94043, desires to acquire an interest therein;

* * *

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, said ASSIGNOR does hereby sell, assign and transfer unto ASSIGNEE, its successors, assigns and legal representatives, the full and exclusive right, title and interest to the said invention in the United States and all forcign countries, as described in the aforesaid application, and to the said application and to all continuations, divisions, reissues and substitutes of said application, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and ASSIGNOR hereby authorizes and requests the Commissioner of Patents to issue said Letters Patent to ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives.

AND ASSIGNOR hereby agrees to execute any papers requested by ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

ASSIGNOR furthermore agrees upon request of said ASSIGNEE, and without further remuneration, to execute any and all papers desired by said ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in said ASSIGNEE.

-1-

To-PILLSBURY MADISON SU Page 02

The undersigned hereby authorizes Pillsbury Madison & Sutro LLP, of the above address, to insert further identification necessary or desirable for recordation of this document.

Executed on the date below indicated.

Signature

Date Signed

Witness

Ramen C. W. Chea. Jr.

P. Kingston Duffie

-2-

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