

```

1. upon event <Init> do
2.     forall  $P_i \in \Pi$  do
3.         delivered[ $P_i$ ] := 0;
4.         missing[ $P_i$ ] := 0;
5.         lsn := 0; stored := 0;
6.
7. procedure gossip (msg) is
8.     forall  $t \in \text{pick-targets (fanout)}$  do
9.         trigger <flp2pSend |  $t$ , msg>;
10.
11. upon event <pbBroadcast |  $m$ > do
12.     lsn := lsn+1; trigger <unBroadcast | [Data, self,  $m$ , lsn]>;
13.
14. upon event <unDeliver |  $P_i$ , [DATA,  $S_m$ ,  $m$ ,  $SN_m$ ]> do
15.     if (store-threshold < random()) then
16.         stored := stored  $\cup$  { [DATA,  $S_m$ ,  $m$ ,  $SN_m$ ] };
17.     if ( $SN_m \geq \text{delivered}[S_m] + 1$ ) then
18.         trigger < pbDeliver |  $S_m$ ,  $m$  >;                                //deliver immediately
19.         forall seqnb  $\in$  [delivered[ $S_m$ ] + 1,  $SN_m - 1$ ] do                //usually you use [n, n + 1m]
20.         //notation
21.             gossip ([REQUEST, self,  $S_m$ , seqnb, maxrounds - 1]);
22.             missing[ $P_i$ ] := missing[ $P_i$ ]  $\cup$  seqnb;
23.             delivered[ $S_m$ ] :=  $SN_m$ ;
24.             startTimer (TimeDelay,  $P_i$ ,  $SN_m$ );
25.         else if ( $SN_m \in \text{missing}[S_m]$ ) then
26.             missing[ $S_m$ ] := missing[ $S_m$ ]  $\setminus SN_m$ ;
27.             trigger < pbDeliver |  $S_m$ ,  $m$  >;
28.
29. upon event <flp2pDeliver |  $P_j$ , [REQUEST,  $P_i$ ,  $S_m$ ,  $SN_m$ ,  $r$ ] > do
30.     if ([DATA,  $S_m$ ,  $m$ ,  $SN_m$ ]  $\in$  stored) then
31.         trigger < flp2pSend |  $P_i$ , [DATA,  $S_m$ ,  $m$ ,  $SN_m$ ] >;
32.     else if ( $r > 0$ ) then
33.         gossip ([REQUEST,  $P_i$ ,  $S_m$ ,  $SN_m$ ,  $r - 1$ ]);
34.
35. upon event <flp2pDeliver |  $P_j$ , [DATA,  $S_m$ ,  $m$ ,  $SN_m$ ] > do
36.     if ( $SN_m \in \text{missing}[S_m]$ ) then
37.         missing[ $S_m$ ] := missing[ $S_m$ ]  $\setminus SN_m$ ;
38.         trigger < pbDeliver |  $S_m$ ,  $m$  >;

```