```
int buffer[SIZE];
int n_receivers;
int nextSend = 0;
int current[];
int totalReaders[SIZE] = [0, .., 0];

sem mexc1 = 1;
sem mexc2 = 1;
sem_t bufferEmpty[SIZE] = [1, .., 1];
sem_t bufferFull[SIZE]  = [0, .., 0];

int inicia(int transmissores, int receptores) {
        n_receivers = receptores;
        current[n_receivers] = [0, .., 0];

        return true;
}

void envia(int val) {
        int tmpSend;

        < await(mexc1 > 0) mexc1--; >
                tmpSend = nextSend % SIZE;
                nextSend++;
        < mexce1++; >

        < await(bufferEmpty[tmpSend] > 0) bufferEmpty[tmpSend]--; >

        buffer[tmpSend] = val;

        < bufferFull[tmpSend] = n_receivers; >
}

int recebe(int id) {
        int item, position = current[id] % SIZE;

        < await(current[id] < nextSend and bufferFull[position] > 0) bufferFull[position]--; >

        item = buffer[position];
        current[id]++;

        < await(mexc2 > 0) mexc2--; >
                totalReaders[position]++
                if(totalReaders[position] == n_receivers) {
                        totalReaders[position] = 0;
                        < bufferEmpty[position]++; >
                }
        < mexce2++; >

        return item;
}
```