

### **ON RECEIVING CH(u) :**

When a neighbour  $u$  becomes a clusterhead, on receiving the corresponding CH message, node  $v$  checks if it has to affiliate with  $u$  i.e., it checks whether  $w_u$  is bigger than the weight of  $v$ 's clusterhead or not.

ON RECEIVING CH( $u$ );

```
begin
    if ( $w_u > w_{clusterhead}$ ) then
        begin
            send JOIN( $v, u$ );
             $Clusterhead := u$ ;
            if  $Ch(v)$  then  $Ch(u) := \text{false}$ 
        end
    end
```

### **ON RECEIVING JOIN(u,z) :**

On receiving the message Join( $u, z$ ), the behaviour of a node  $v$  depends on whether it is a clusterhead or not. In the affirmative,  $v$  has to check if either  $u$  is joining its cluster. If  $v$  is not a clusterhead, it has to check if  $u$  was a clusterhead. Only if this is the case,  $v$  has to decide its role. It will join the biggest node in the neighbourhood such that  $w_x > w_v$  if such a node exists.

ON RECEIVING JOIN( $u, z$ );

```
begin
    if  $CH(v)$ 
        then if  $z=v$  then  $Cluster(v) := Cluster(v) \cup \{u\}$ 
        else if  $u \in Cluster(v)$  then  $Cluster(v) := Cluster(v) \setminus \{u\}$ 
        else if  $Clusterhead=u$  then
            if  $\{ z \in \Gamma(v) : w_z > w_v \wedge Ch(z) \} \neq \emptyset$ 
                then begin
```