Algorithm 3 UR(Object o, DeploymentGraph G)

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1:  Region UR ← ∅;
2:  Door d ← ∅;
3:  Integer radius ← 0;
4:  Device dev ← OLHT[o].deviceID;
5:  TimeStamp t ← OLHT[o].t;
6:  if OHT[o].STATE = Active then
7:      Region re ← Devices(OHT[o].IDSet).AR;
8:      UR ← re ∩ C_MSC(o, dev, t);
9:  else
10:     for each cell c in G.ℓ_E^{-1}(dev) do
11:         for each room rm in Cells(c) do
12:             if rm in Devices(dev).RoomSet then
13:                 UR ← UR ∪ (rm ∩ C_MSC(o, dev, t));
14:             else
15:                 Room rm2 ← Cells(c) ∩ Devices(dev).RoomSet;
16:                 d ← Doors(rm2) ∩ Doors(rm);
17:                 if Devices(dev).TYPE = PR then
18:                     radius ← o.V_max · (t_now − t) − PR2D(dev, d);
19:                 else
20:                     Door d' ← PA2D(dev);
21:                     radius ← o.V_max · (t_now − t) − D2D(d, d');
22:                 UR ← UR ∪ (rm ∩ Circle(d, radius));
23: return UR;
```