```
 1: function GENERATE_SYSTEM(system, mappings, id)
 2:     mapping := get_mapping_by_id(mappings, id)
 3:     remove_template_device(system)
 4:     create_segment(ETHERNET)
 5:
 6:     for all ied in keyset(mappings) do
 7:         resource := add_device_and_resource(get_name(ied))
 8:         add_fb(system, resource, E_RESTART)
 9:         connect_to_segment(ied, ETHERNET)
10:
11:         for all fb in mapping[ied] do
12:             if is_iec_61850_fb(fb) then
13:                 continue
14:             end if
15:
16:             if is_initializable(fb) or is_startable(fb) then
17:                 connect_to_restart(system, resource, fb)
18:             end if
19:
20:             for all con in get_connections(system, fb) do
21:                 if get_from(con) == fb then
22:                     if get_to(con) in mapping[ied] then
23:                         add_connection(system, resource, fb, con)
24:                     else
25:                         connect_to_publish(system, resource, fb, con)
26:                     end if
27:                 else
28:                     if get_from(con) in mapping[ied] then
29:                         add_connection(system, resource, fb, con)
30:                     else
31:                         connect_to_subscribe(system, resource, fb, con)
32:                     end if
33:                 end if
34:             end for
35:         end for
36:     end for
37:     return system
38: end function
```