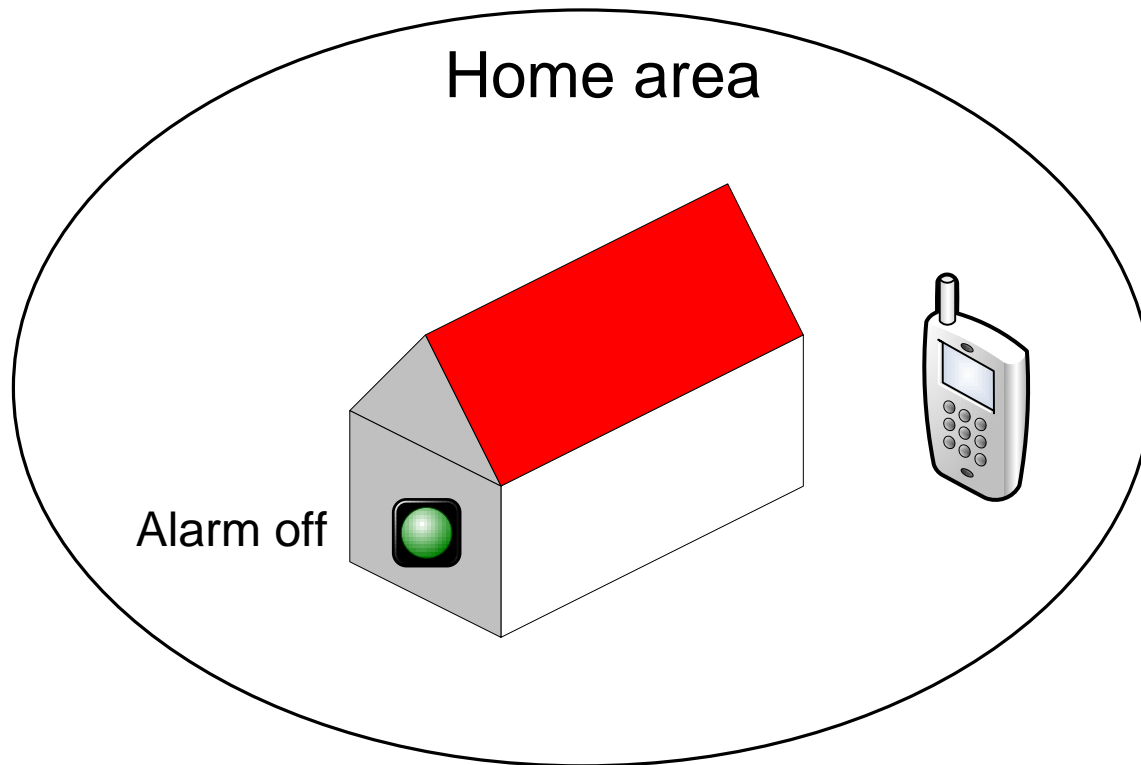


1

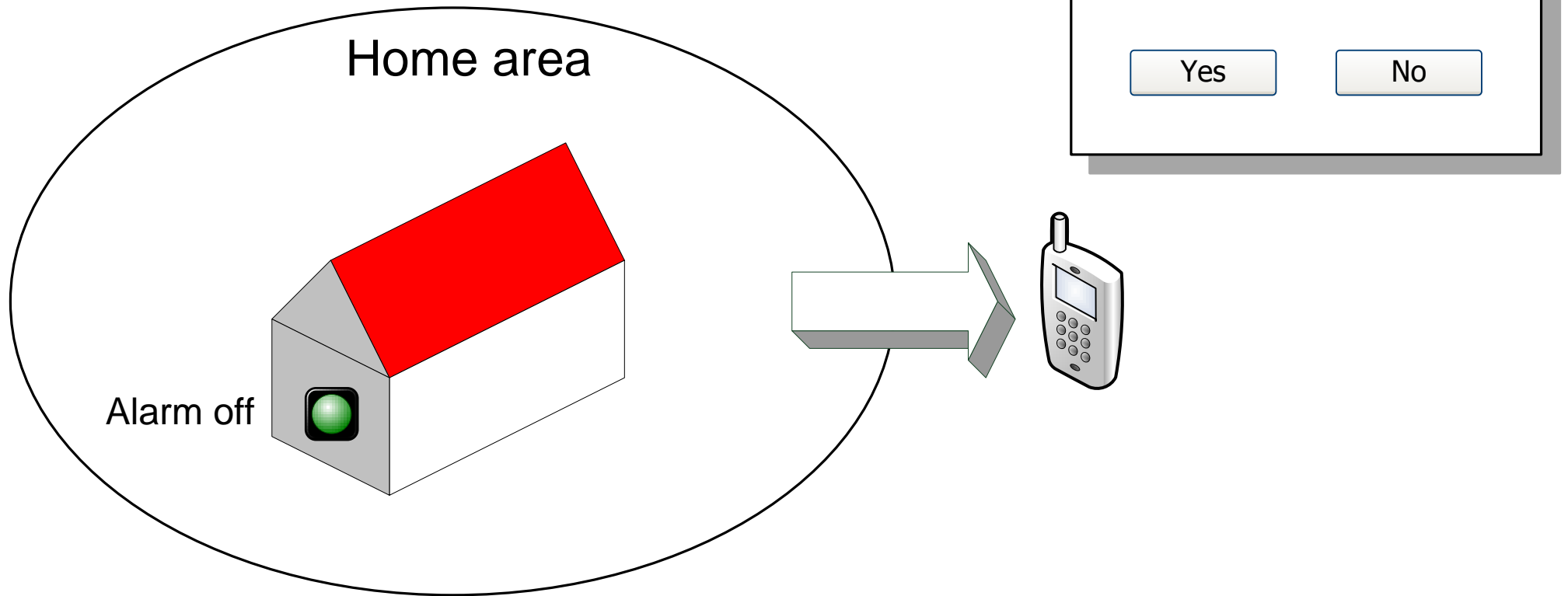
Location awareness



Bluetooth, WiFi or GPS can be used to detect when the phone leaves the home area. For Bluetooth and WiFi the home area is defined by the coverage area of the network they provide.

2

Activation



When the user moves outside the home area the phone notifies the user if the alarm system is not activated.

3

Communication with home server outside home area

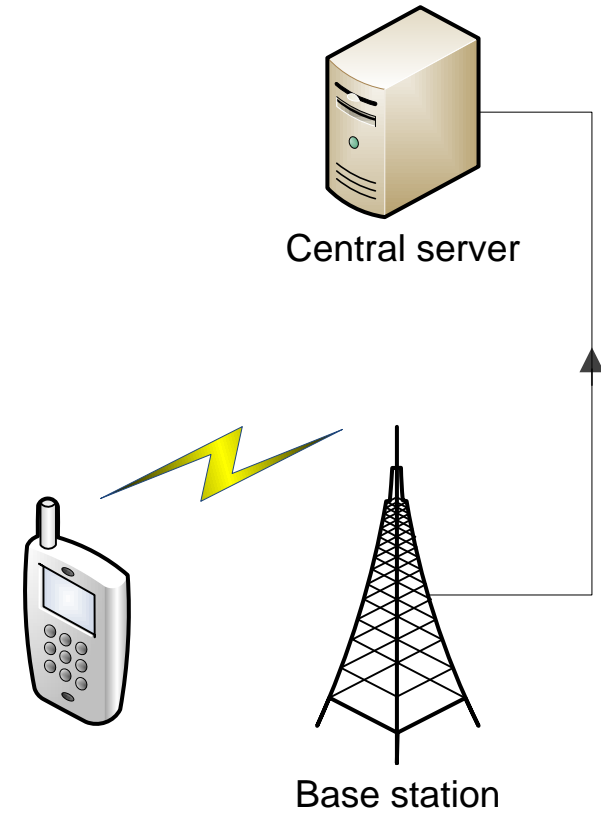
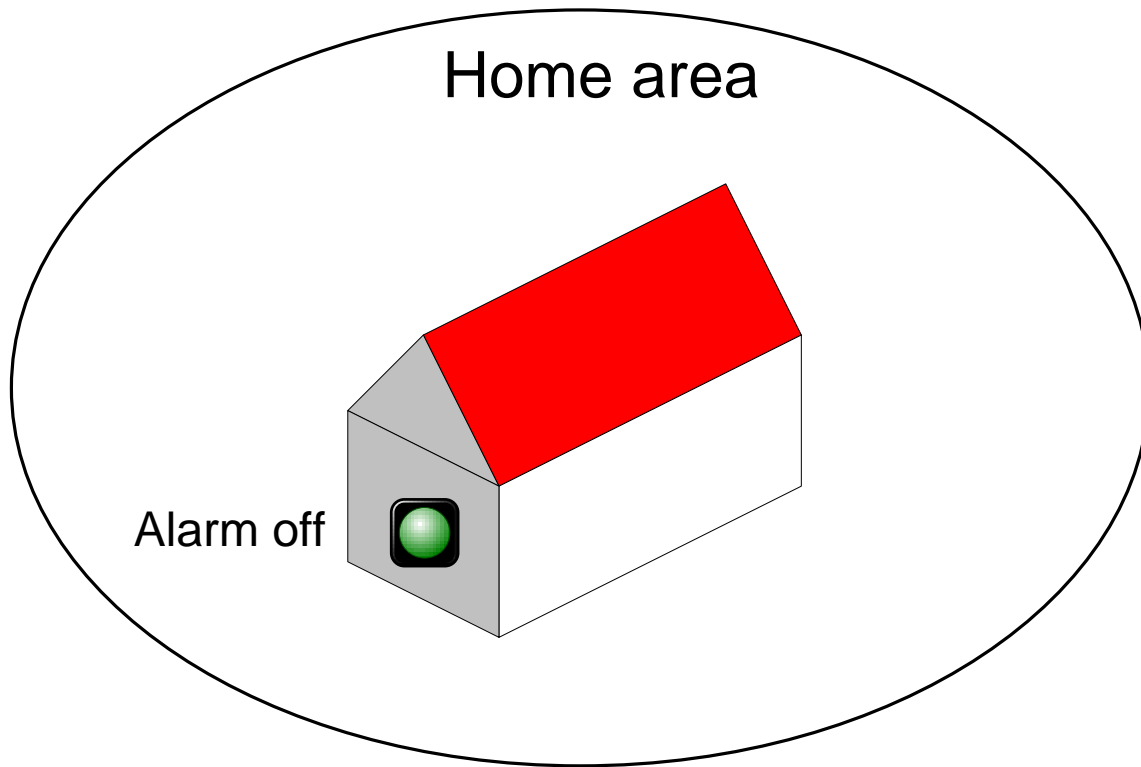
- GPRS with relay (4a-d)
- GPRS without relay (5a-c)
- SMS (6a-d)

Communication with home server inside home area

- GPRS with relay
- GPRS without relay
- SMS
- Local Bluetooth connection
- Local WiFi connection
- +++

4a

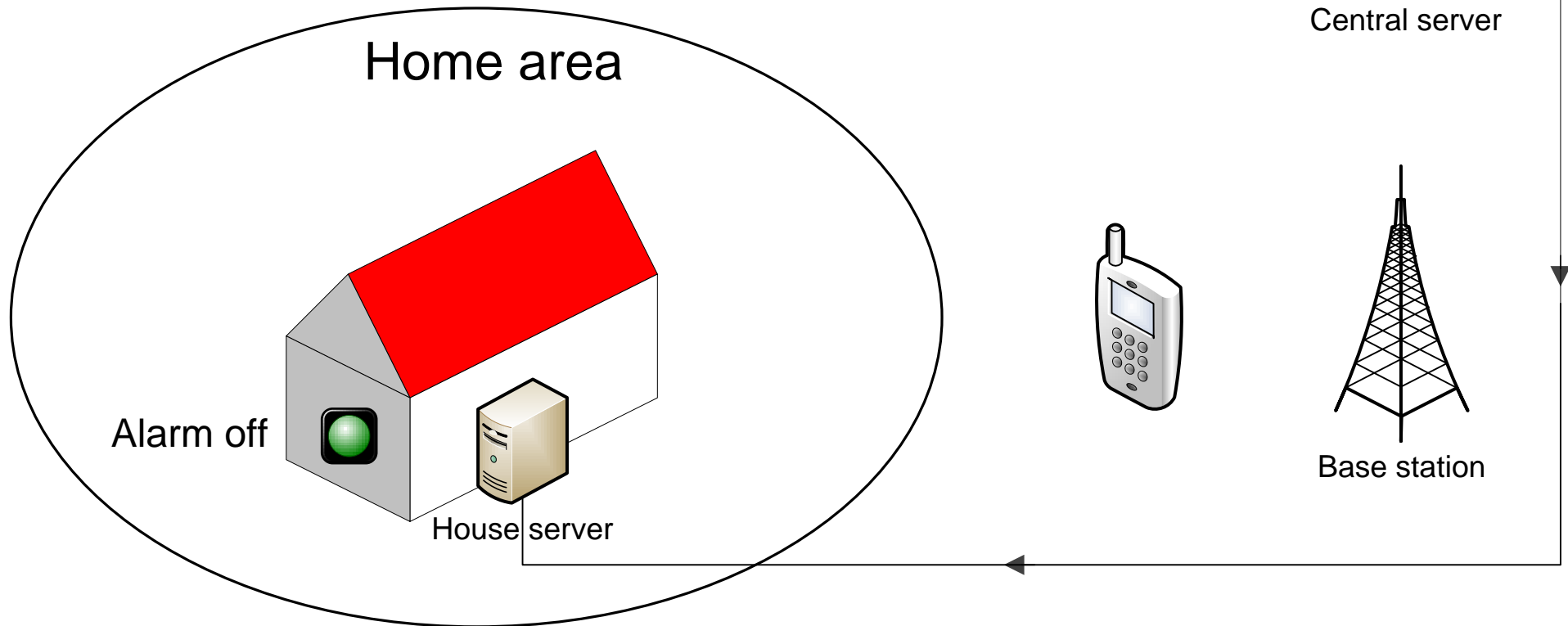
Alarm activation – GPRS with relay



Phone uses TCP/IP over GPRS to communicate with a central server to activate the alarm.

4b

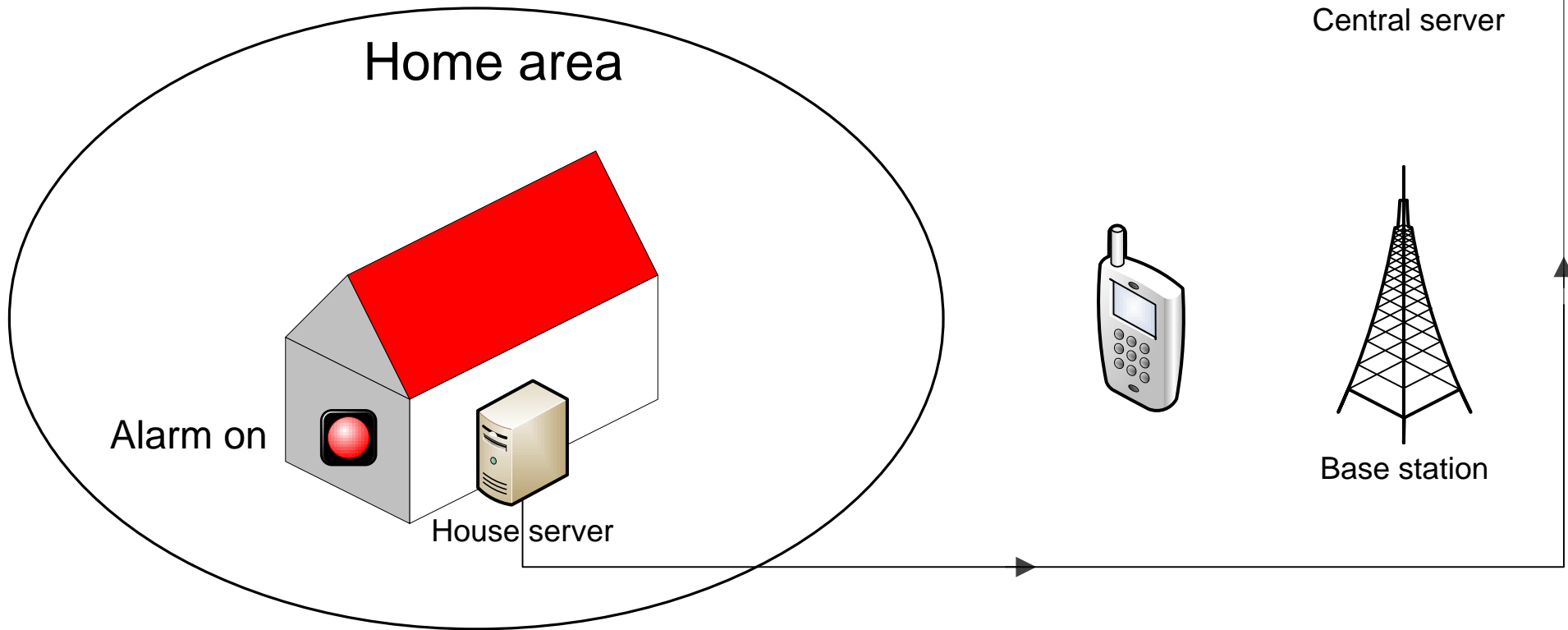
Alarm activation – GPRS with relay



Central server knows the IP address of the house server and tells it to enable the alarm system.

4c

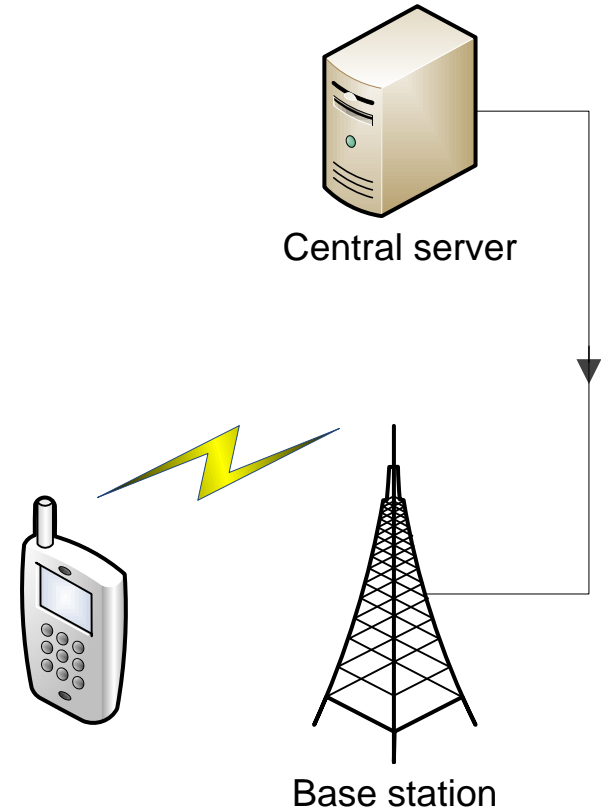
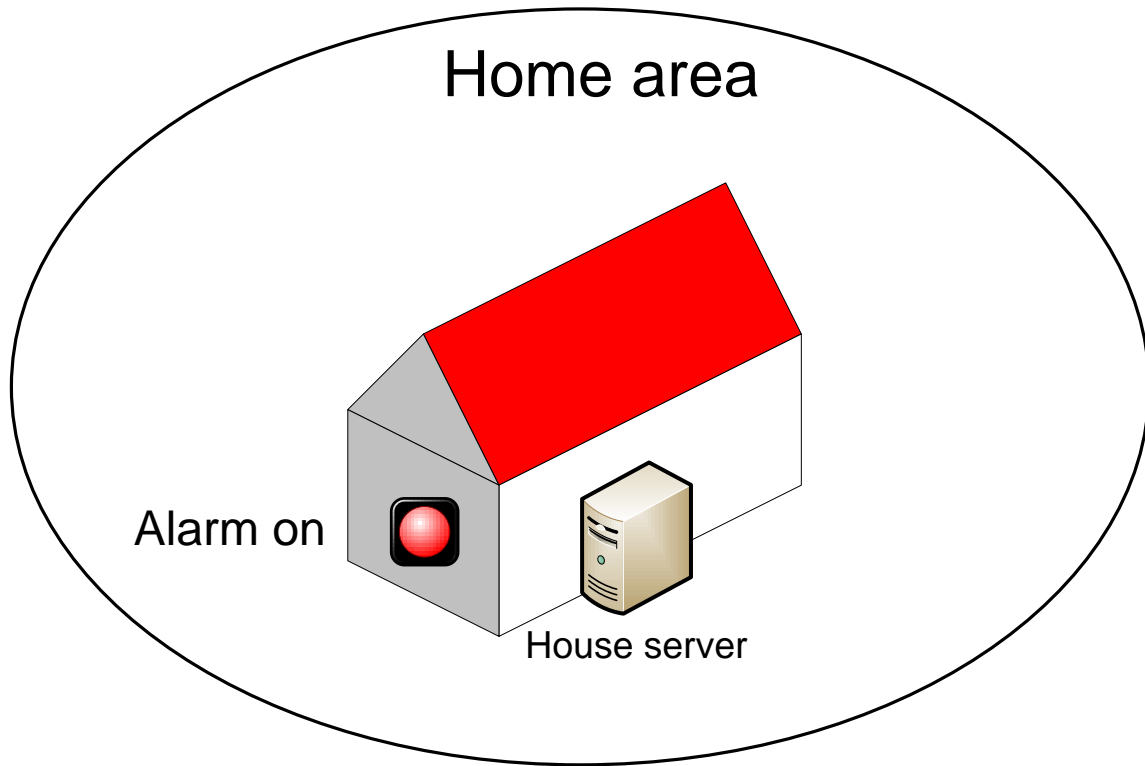
Alarm activation – GPRS with relay



House server turns on the alarm system and notifies the central server.

4d

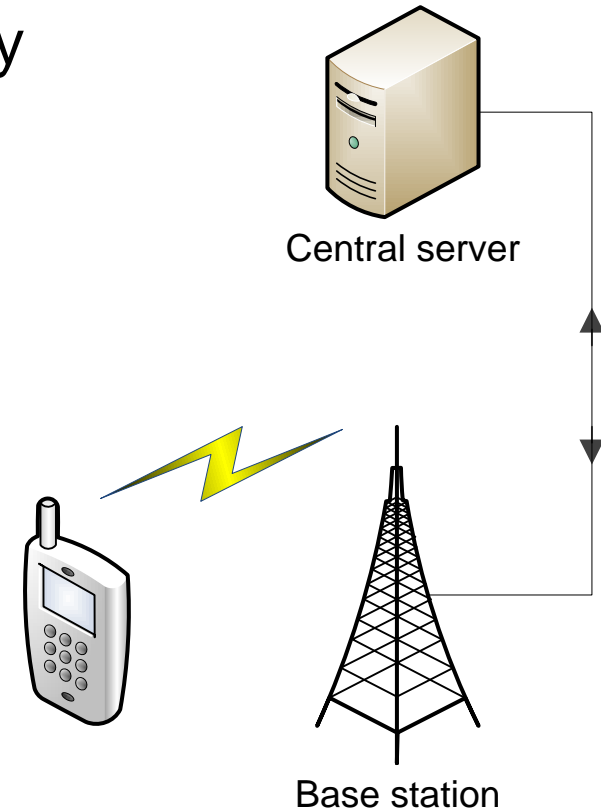
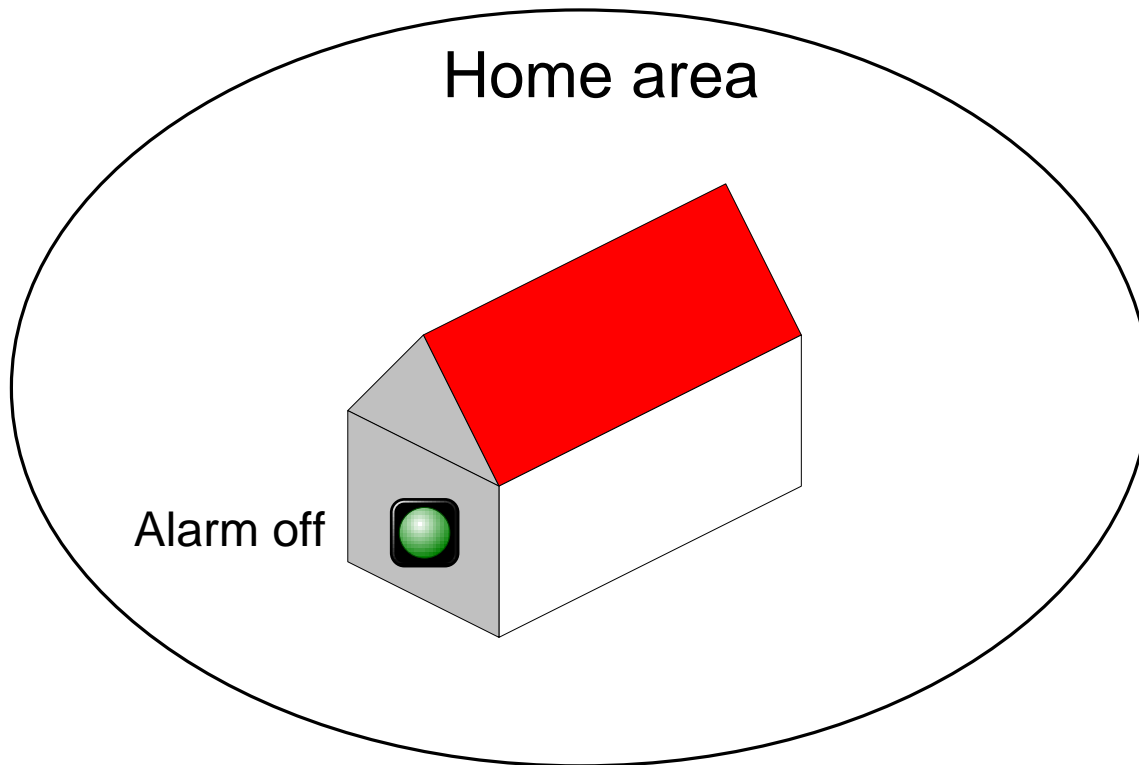
Alarm activation – GPRS with relay



Central server relays the notification to the phone.

5a

Alarm activation – GPRS without relay

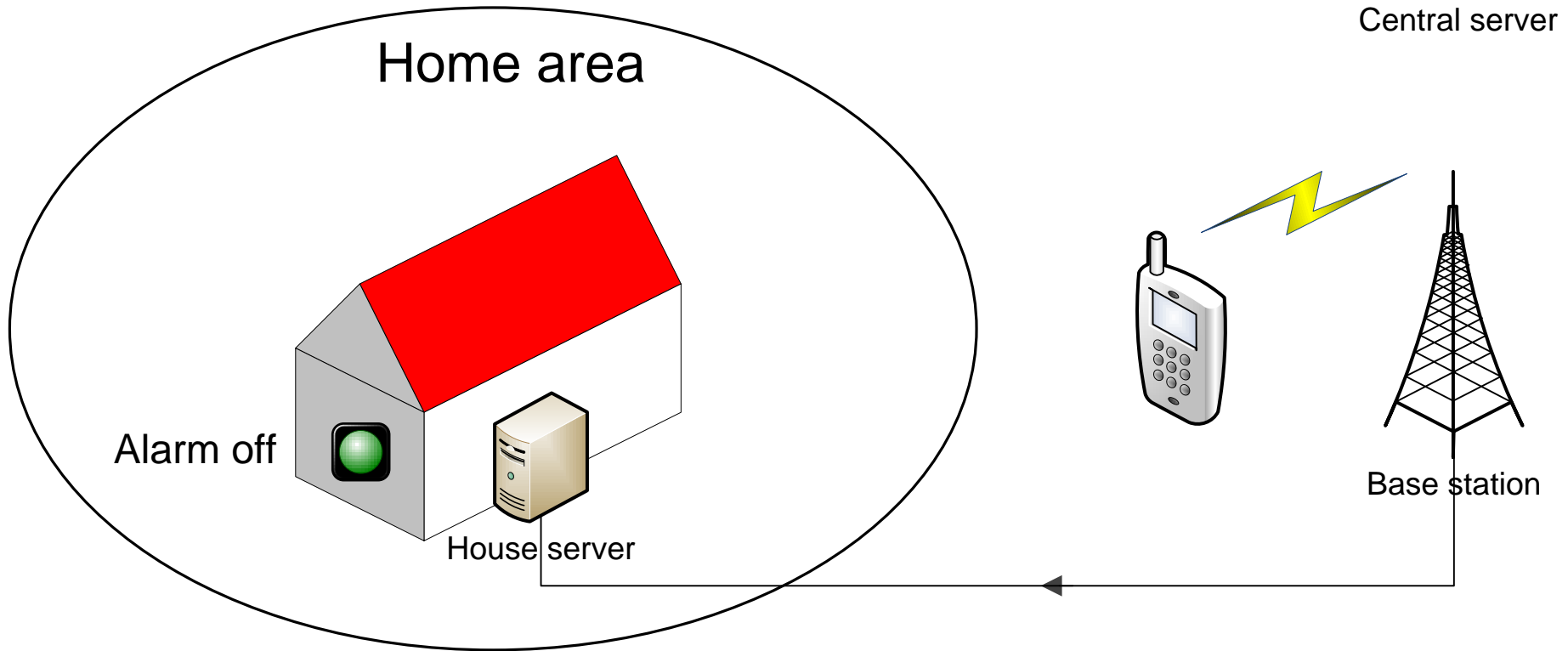


Phone uses TCP/IP over GPRS to communicate with a central server. Central server provides the IP address to the home server.

Note: This step can be omitted if the home server has a static IP address or host name known by the phone.

5b

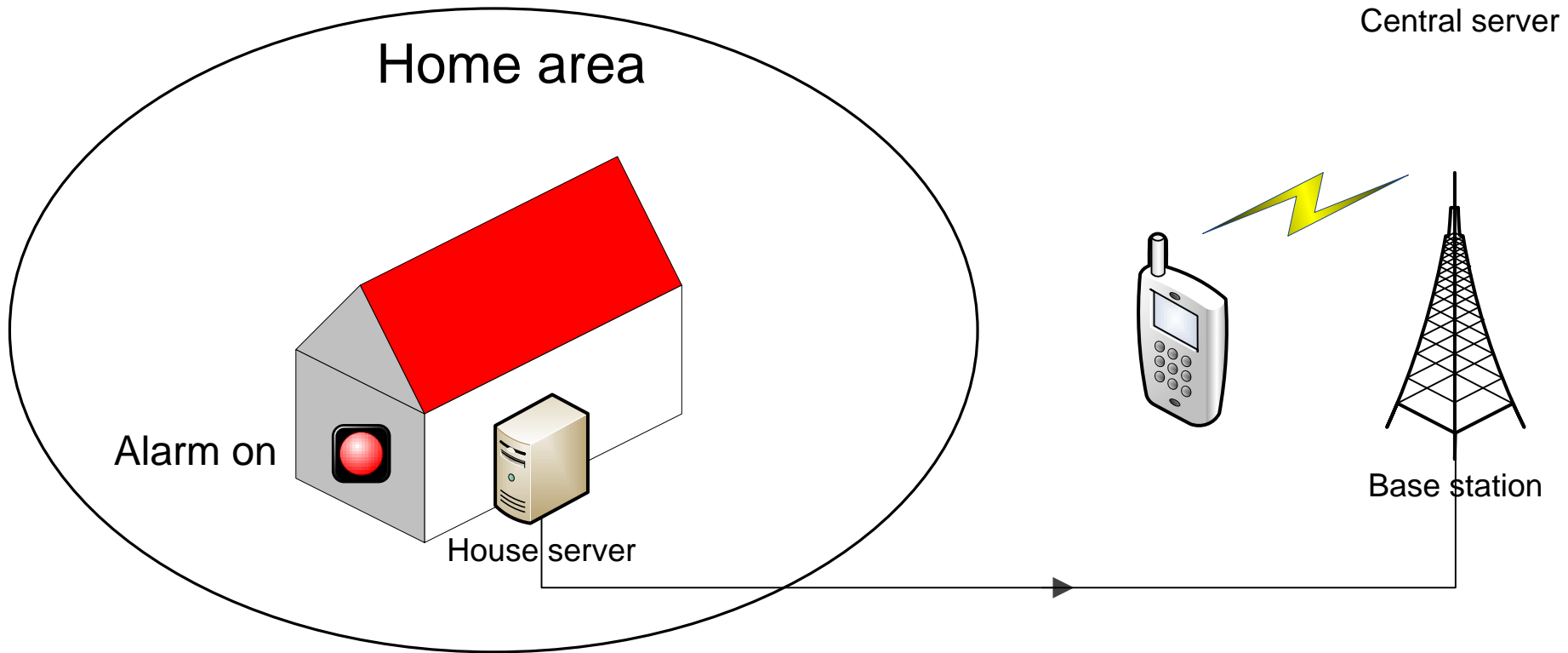
Alarm activation – GPRS without relay



Phone contacts the house server directly and tells it to enable the alarm system.

5c

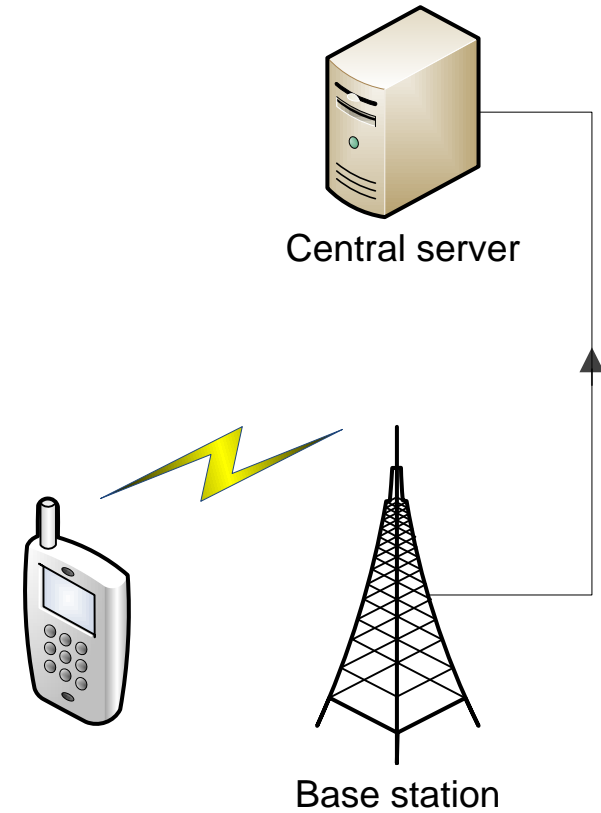
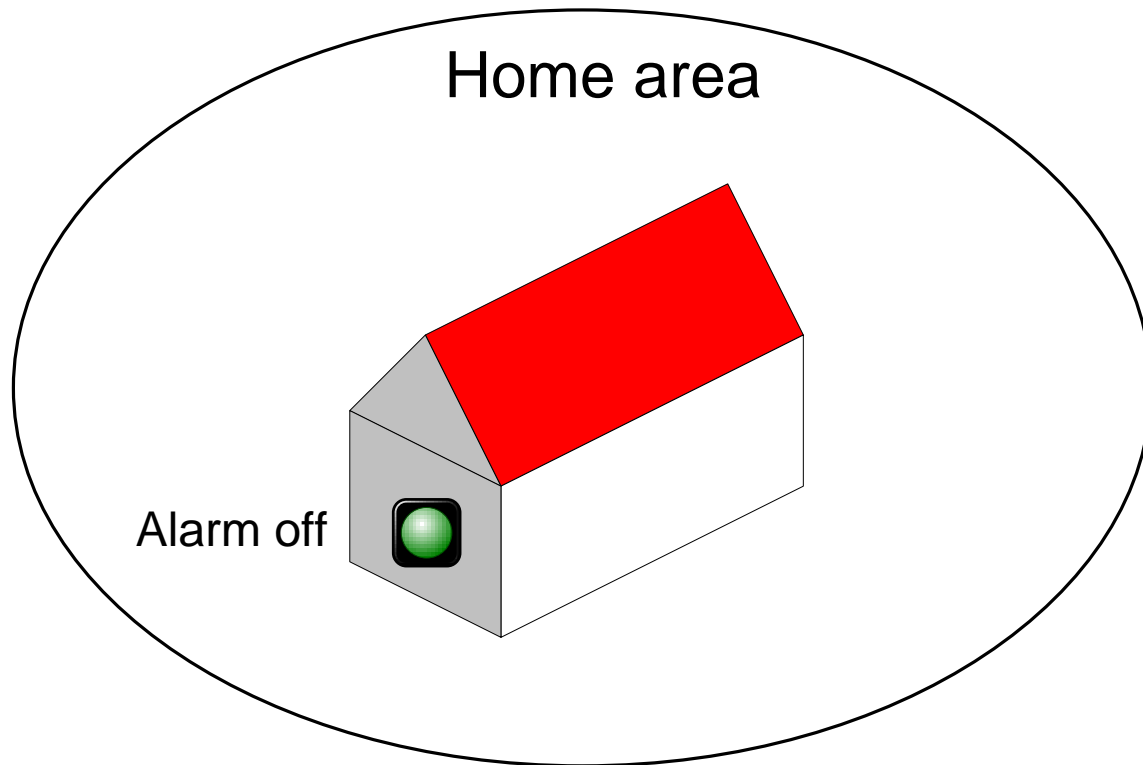
Alarm activation – GPRS without relay



House server turns on the alarm system and notifies the phone.

6a

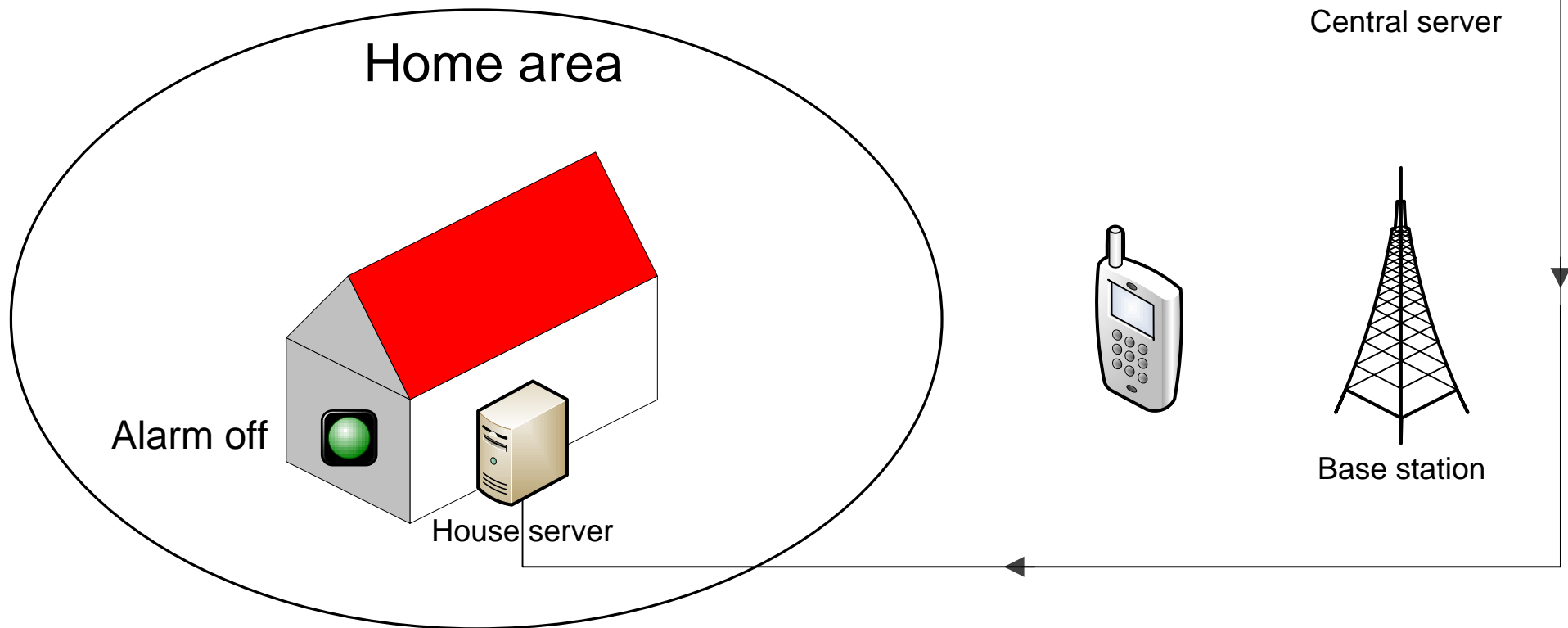
Alarm activation – SMS



Phone uses SMS (generated by application) to communicate with a central server to activate the alarm.

6b

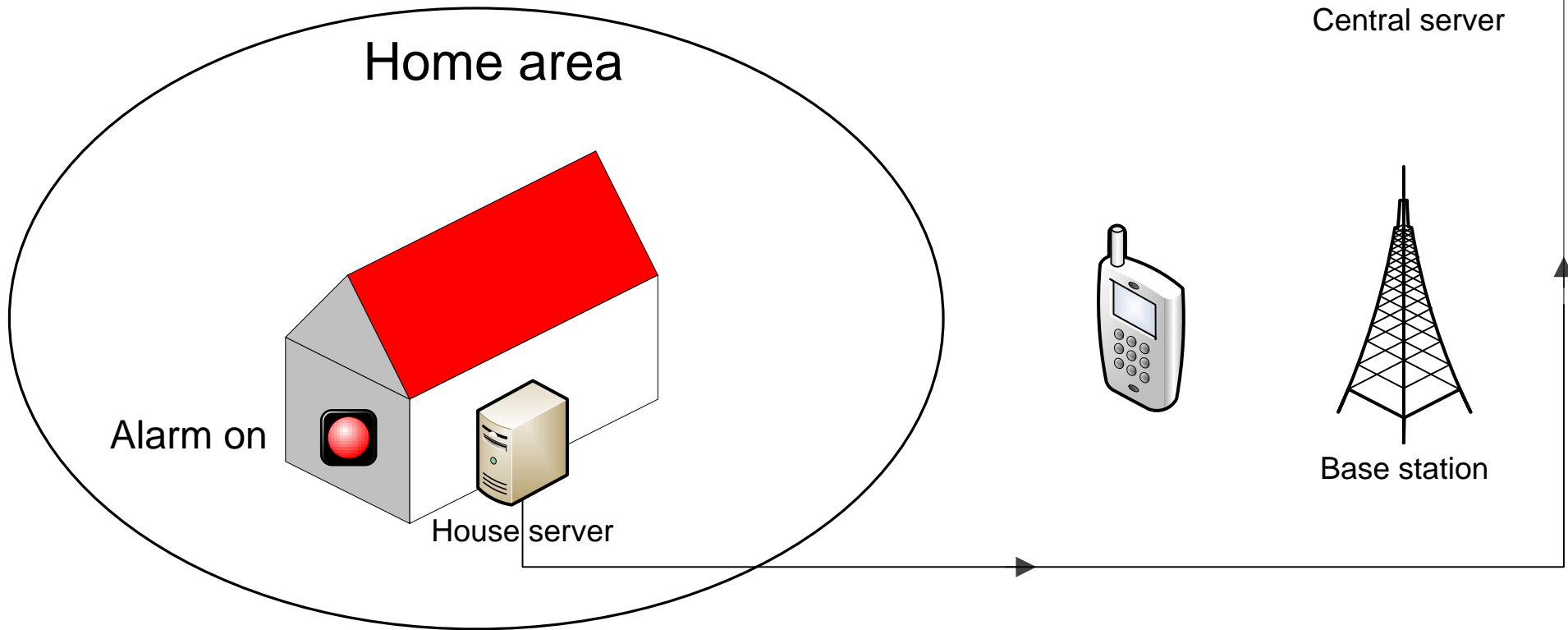
Alarm activation – SMS



Central server knows the IP address of the house server through TCP/IP it tells it to enable the alarm system.

6c

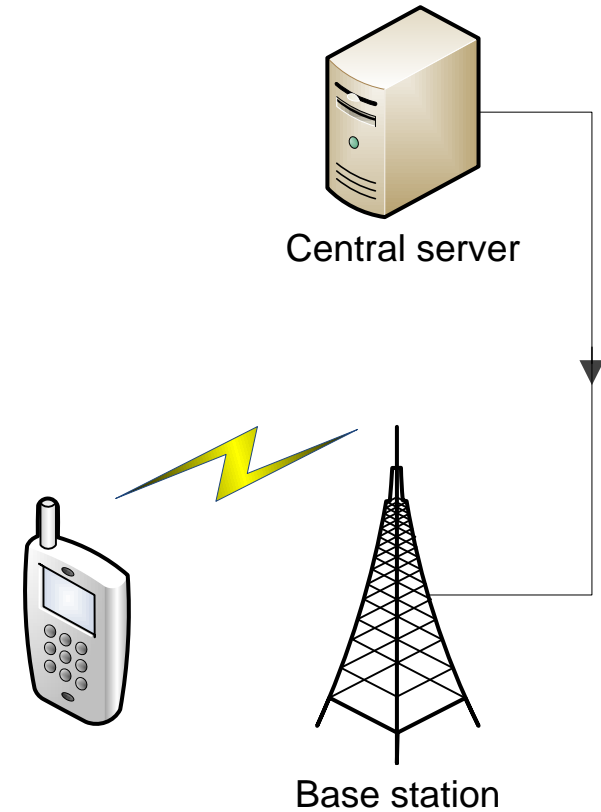
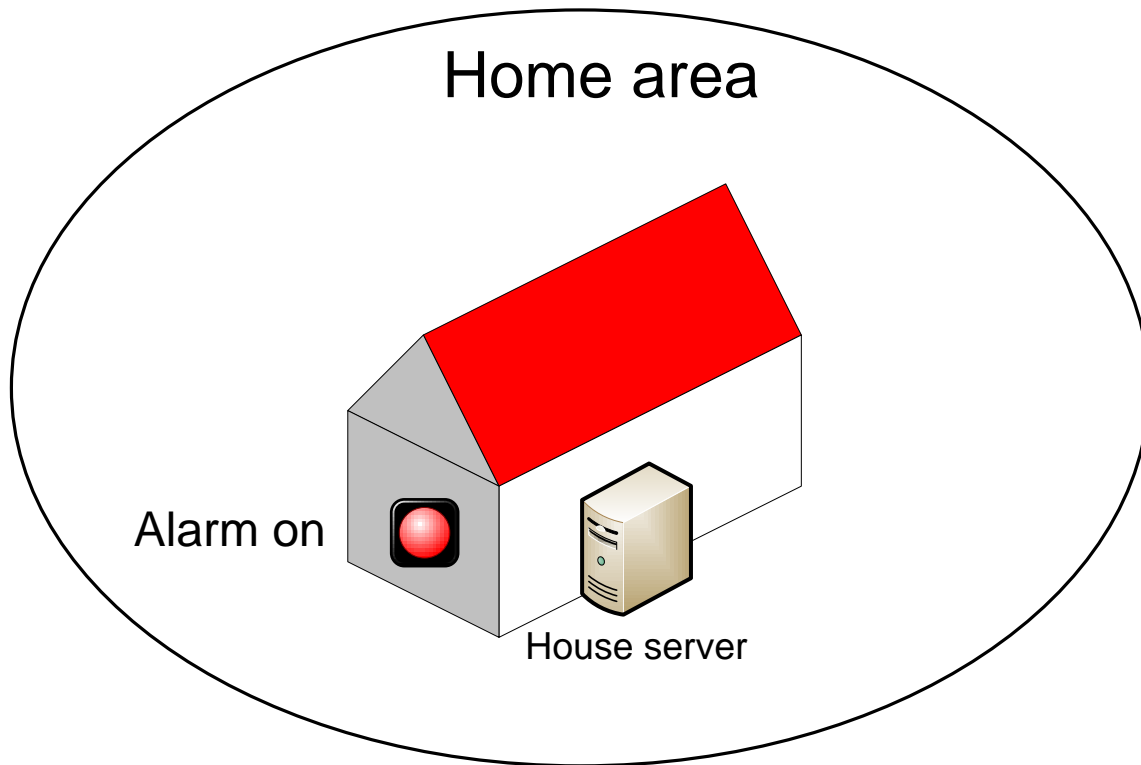
Alarm activation – SMS



House server turns on the alarm system and notifies the central server.

6d

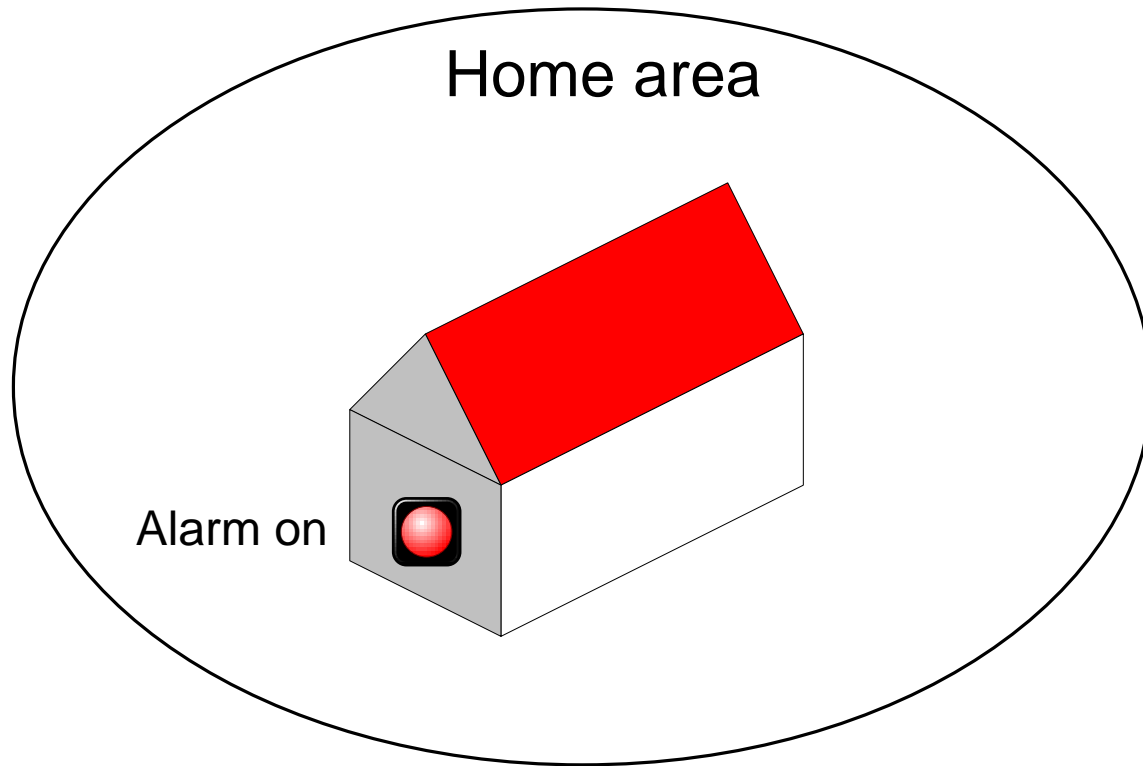
Alarm activation – SMS



Central server relays the notification to the phone by SMS. The SMS is captured and processed by the application on the phone.

7

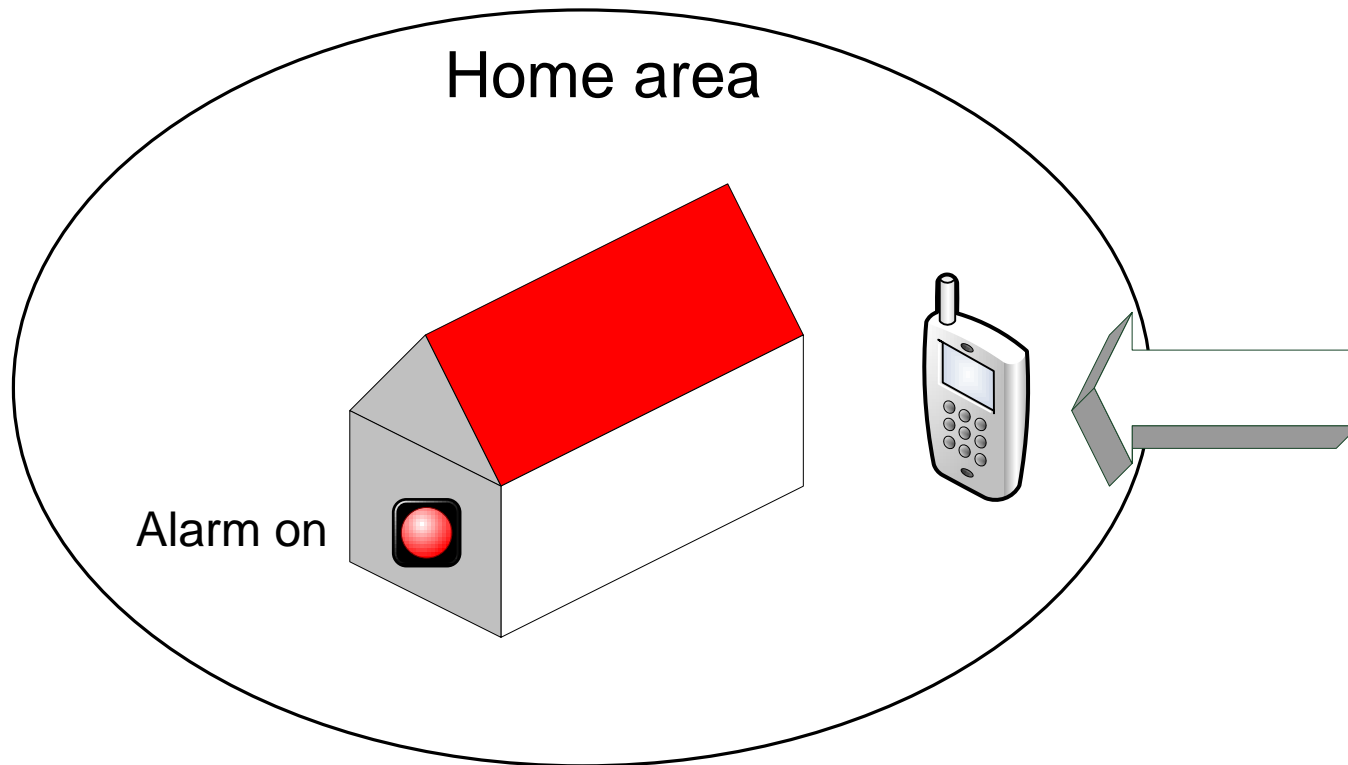
Activation notification



User is notified that the alarm system has been activated.

8

Deactivation



Your alarm system is activated. Do you wish to deactivate it?

Yes

No

When the user moves back inside the home area the phone notifies the user if the alarm system is activated. It can then use the same method used to activate the alarm, or the local WiFi or Bluetooth connection.

9

Remarks

- The house server can track the presence of several mobile phones and only show the activation notification when the last phone leaves the home area.
- The user can activate, deactivate and check the alarm status regardless of location.
- This location based scheme can also be used to automatically activate/deactivate the alarm.
- Connect the system to the garage door opener, light system, toaster, coffee maker, microwave, heating system, automatic door opener and the user doesn't have to lift a hand when he comes home.