# Main benefits:

* Reduce energy use
* Security : built in alarm system, turn the lights on automatically
* Convenience : remote control, mobile app, over internet
* Automate holiday lightning
* Whole home Video
* Whole home audio
* Access control
* climate control
* Home monitoring
* Irrigation
* Surveillance
* Sensors

# References & stadards

* Z-wave home control system: connects home electronics (appliances, lightning, climate control, security systems ...). Z-wave is a protocol for communication among devices used for home automation. It uses RF for signaling and control. Z-ware is based on the concepts of Zigbee.
* X10 utilize a home's existing powerline wiring for communication
* UPB Universal powerline bus is a protocol for communication among devices using powerline wiring for signaling and control. It is based on X10 standard and has improved transmission rate and higher reliability.
* `INSTEON`: home control and automation technology. Use both existing wires (power line) and radio frequency communication
* Zigbee is a protocol for communication among devices using RF for signaling and control operating on IEEE 802.15.4 radios. Zigbee products are much more expensive than their primary competition (INSTEON and Zwave)
* KNX standard: OSI-based network communications protocol for building automation. Is the successor of three previous standards: European Home Systems Protocol (EHS), BAtiBUS and European Installation Bus EIB.

## Comparison table:

| Brand | INSTEON | Z-wave | Wi-Fi | Bluetooth | Zigbee | |----------------------------+---------+--------+--------+-----------+--------| | max practical network size | 1000's | 30-50 | 12 | 9 | 12 | | physical layer 1 | RF | RF | RF | RF | RF | | physical layer 1 frequency | 915MHz | 915MHz | 2.4GHz | 2.4GHz | both | | to be continued | | | | | | |----------------------------+---------+--------+--------+-----------+--------|

# Operating system / controller / system of systems

* OpenHAB
* Domoticz
* OpenDomotic

# System componement model:

Smarthome system includes:

* light control switch

# Possible shopping list: