

# WhitePaper

## Industrial Home Automation ver. 1.0

*“for a reliable and long lasting home-automation”*

Van Welleman Villas® selected Industrial Automation over traditional EIB/KNX-based Home Automation. Although EIB/KNX systems are ideal for ‘traditional’ domotics and home automation, they are not designed for ‘high risk’ and ‘high security’ environments. Our home-automation solution is designed for that purpose only. As a result it performs in the most harsh environments with one sole objective ... protecting our customers in ‘life threatening’ situations.

Fancy “tablets” as an interface to your home automation system can be visually impressive. However, although very sexy indeed, they have the following major disadvantages:

- apps are vulnerable to bugs, viruses and hackers
- tablets are not suitable for the blind (or foreign tongue)
- touch-screens do not perform well with blood on hands
- touch-screens are not reliable in life-threatening situations
- tablets ‘age’ quickly (i.e. design & economically)
- apps are too slow & too complex for panic situations

On top of the above, in traditional domotics environments these tablets use -vulnerable- WiFi as a communication technology to integrate with EIB-KNX, Z-Wave and IFTTT-based automation systems (e.g. lights, dimmers, audio, ...).

Although KNX, Z-Wave and IFTTT are perfect for traditional home-automation actions, they perform very poorly regarding safety, security and reliability. The reason for that is that these technologies are “mass-market” solutions to be installed in “residential” environments, at reasonable cost, and by installation technicians instead of Ph.D’s. As an example, IFTTT’s target is the end-user with no programming experience whatsoever.

It should be clear that these are not the type of technologies that are used in high-security (industry, manufacturing, nuclear plant, etc.) and military environments such as the Pentagon or the NATO. So if it’s not good enough for them, then it’s not good enough for our customers either.

That is why Van Welleman Villas® opted for industrial home automation, industrial HMI’s (Human Machine Interface) and high-reliability switches (although exclusive also) instead of fancy tablets and smartphones..

The following advantages arise out of this approach :

- user friendly and intuitive
- very simple to use, also for visitors
- extremely stable, no “blue screens” or crashes
- also works when sitting on the ground or in heavy smoke
- also works when blind or disabled sight (no “menu’s”)
- optimized for use in “panic” situations
- protected against “hacking”, “tasers”, “burglary”, “attacks”
- works also with blood and/or fat on the fingers

All of the above is done with one purpose only ... ensuring the very best and safest environments for our customers.

### KNX

KNX is a worldwide standard for the control of building management equipment such as: lights, blinds/shutters, security systems, energy management, heating, ventilation and air-conditioning systems, signaling and monitoring systems, interfaces to service and building control systems, remote control, metering, audio/video control, white goods, etc. It is developed for non-critical environments such as private residences and/or office environments.

### Z-Wave

Z-Wave is a wireless communications technology allowing home automation devices in the home to communicate with each other. Z-Wave is not an alternative to KNX, it is to be used on-top or together with KNX. It is a technology designed to be embedded in small consumer electronics and battery operated devices such as remote controls, smoke alarms and security sensors.

### IFTTT

IFTTT is a free cloud service to create chains of simple logical commands, called “recipes”, which are triggered by web services called ‘channels’ such as Gmail, Facebook, Instagram, and -for example- Philips Hue (light control).

A clear trend is to combine all of the above to create automated homes. Unfortunately, starting as an innocent automation task, it soon becomes a chaotic and unstructured set of automation tasks. Also, the multitude of potential ‘open’ links to the Internet make it almost impossible to guarantee a safe and reliable home automation.





fig 1. Traditional Home Automation example.  
 (i.e. based upon technologies designed with a focus on mass markets, apps, low costs, simple installation ...)

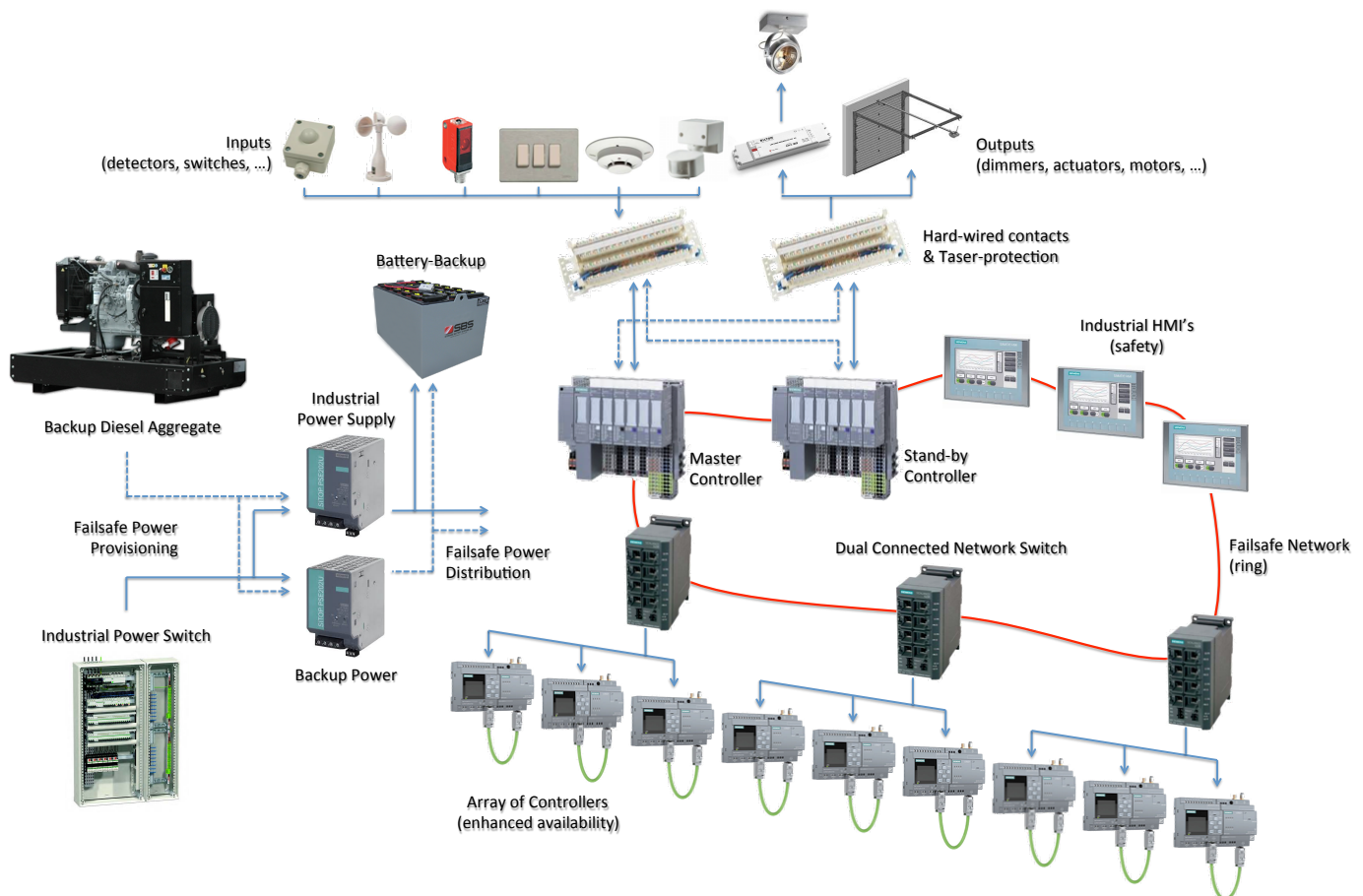


fig 2. Industrial Home Automation example.  
 (i.e. based upon technologies designed with a focus on reliability, robustness, durability, safety ...)