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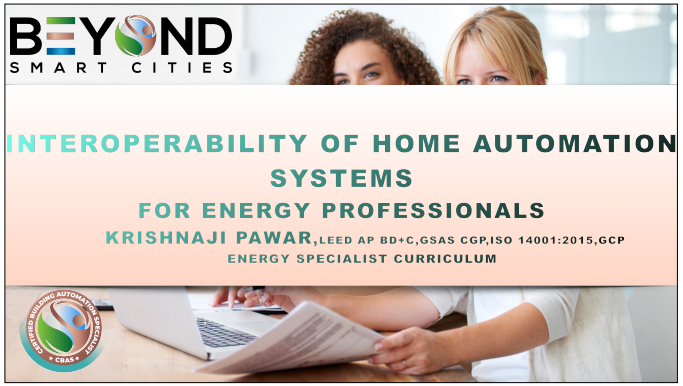
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SMART CITIES
INTEROPERABILITY OF HOME AUTOMATION SYSTEMS
FOR ENERGY PROFESSIONALS
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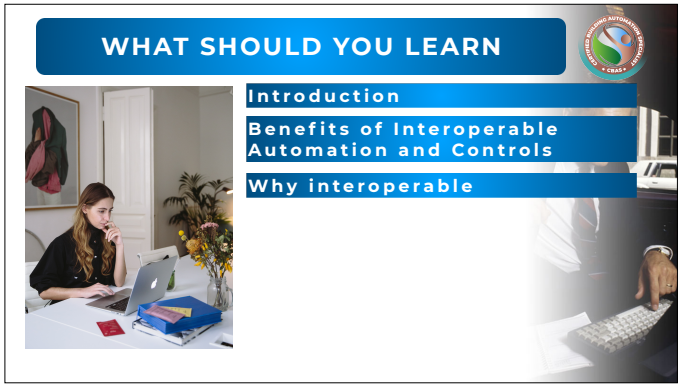
ENERGY SPECIALIST CURRICULUM


WHAT SHOULD YOU LEARN
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Benefits of Interoperable Automation and Controls
Why interoperable

INTRODUCTION

The spread of enabling technologies for the Internet of Things allows the creation of new scenarios in which home automation plays a significant role. Platforms for smart cities and communities, which must include applications for energy efficiency, health, mobility, security, etc., cannot ignore the use of data gathered directly from homes.

In order to implement such scenarios, all the related technological infrastructure and home systems must be able to understand each other and exchange information.

It allows different, incompatible technologies to cooperate inside and outside the home, thus creating a single ecosystem. In order to achieve tins goal, specific problems need to be solved to be able to construct "bridges" between the various home automation networks currently in use.

INTRODUCTION +

With the spread of increasingly fast and reliable communication technologies such as 5G, the number and functionalities of the components available in Internet of Things (IoT) solutions will soon grow exponentially. New real-time applications and smart city solutions will be able to exploit these technologies to create a large new coherent infrastructure able to connect people, homes, buildings, and entire living areas.

The technology surrounding people will become invisible, and new innovative human-machine interactions with autonomous and intelligent entities will act in a fully interoperable main system to improve the everyday life of humans unobtrusively and transparently.

BENEFITS OF INTEROPERABLE AUTOMATION AND CONTROLS

Interoperability is an important yet tricky function in industrial plants. The term interoperable refers to a product's ability to work alongside and communicate with products from other manufacturers. It's a basic standardization of machines in the industry. But it isn't an easy thing to guarantee.

Most standards for automation and controls today are vertical. Each standard matches with a specific function or machine and, typically, only that function or machine. So there are few to no general standards across different controls and functions in industry.

Many manufacturers also use different methods and technologies in their products, some of which can be incompatible. This is why standards for interoperability are necessary for future products and controls.

WHY INTEROPERABLE

Despite the challenges, interoperability is still a very useful function for future machines to have. There are also a number of reasons for incorporating interoperable automation and controls in a plant. The ones listed here are three of the biggest benefits that interoperable automation and controls offer.

Lower operational cost :

Interoperability allows systems to be optimized for different functions, which means less time and manpower needs to be spent on transferring data between machines. Interoperability also means managers and operators aren't constrained to a specific manufacturer, and can purchase products from less expensive sources.

WHY INTEROPERABLE +

Easier data transfer and sharing

When using controls and products from different manufacturers, data extraction and transfer between them can be difficult. Interoperability means that data doesn't need to be moved around manually between independent products. This allows the data to be shared more easily and more efficiently between machines.

Flexibility :

The biggest benefit to implementing interoperability is the flexibility it gives operators and managers. Interoperability allows for hardware and software to be used interchangeably as long as they support each other. It also allows for transportability if a facility moves location or needs to be adjusted or remodeled. Operators and managers are no longer tied to one specific manufacturer for their plant equipment, which can also save money in the long run.

WHY INTEROPERABLE +

Interoperability can be tricky to get right. When it's done right however, it can be a valuable tool on the plant floor. From money saving to ease of use for data to general flexibility around a plant, interoperability offers many benefits to operators and plant managers.

Despite the challenges, such as lack of standardization, interoperability is a valuable and important feature for the future of industrial automation and controls.

Interoperability brings enormous benefits, but it would be a mistake to assume that the path to it is always completely smooth. Standards are being developed continuously, so many uncertainties remain.

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