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PRESS KIT

# LEGRAND AT CES 2018



# Experience Legrand at the heart of connected buildings

 **legrand®**

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# CES 2018: Legrand at the heart of connected buildings




According to the forecasts from a survey of the Internet of Things carried out by Gartner, the number of connected devices in use in 2017 is expected to rise by 31 % (compared to 2016), with 2 billion additional connected devices, amounting to a total of 8.4 billion. In 2018, there are likely to be more than 11 billion and by 2020, Gartner expects there to be 20 billion connected devices. According to the Idate institute, this figure could even reach 80 billion.

Irrespective of the growth forecasts, connected devices are already prevalent in our daily lives and are significantly changing our habits. With its key role in home and building infrastructures, Legrand has already adapted its approach to these developments and is continuously innovating to facilitate the integration of these new solutions.





Convinced of the importance of connected devices and their added value for users, the Group is continuing to speed up its development in this area and to reinvent buildings by offering users the opportunity to experience something new.

Backed by its new innovations and partnerships, Legrand is attending the Consumer Electronics Show (CES) in Las Vegas for the 4th consecutive year.

## CES 2015: 1st participation

-  1 alliance  
(Zigbee Alliance),
-  1 solution,
-  1 user  
experience





## CES 2016: 2nd participation

-  1 partner  
(La Poste),
-  2 alliances  
(with Zigbee and Allseen),
-  1 solution,
-  3 user  
experiences

## CES 2017: 3rd participation

-  3 partners  
(La Poste, BNP Paribas  
Immobilier, Netatmo),
-  2 alliances  
(with Zigbee and Thread),
-  3 solutions,
-  10+ user  
experiences

## CES 2018: 4th participation

-  20+ partners  
(Renault, Samsung/  
Marriott, Amazon Echo,  
Microsoft Azure...),
-  3 alliances  
(with Zigbee, the Open  
Connectivity Foundation  
and Thread),
-  close to 10  
solutions,
-  30+ user  
experiences

The first participation  
with a dedicated  
Legrand stand

The second participation  
with a dedicated  
Legrand stand

## Legrand at the forefront of the trends at CES 2018: artificial intelligence, IoT, voice recognition

Providing proof that the Group's acceleration is entirely in line with the trends at CES, its Eliot program, which aims to speed up adoption of the Internet of Things (IoT) within Legrand's product range, has never been so dynamic.

This year's CES is therefore the perfect occasion for Legrand to:

- Demonstrate the need to develop an infrastructure tailored to the connected experience,
- Highlight the benefits of interoperability by previewing its new partnership program **Works with Legrand\***,
- Present its latest innovations, especially those equipping the first connected buildings in the world,
- And focus on the first systems using artificial intelligence and voice control in the world of connected buildings.



*Gilles SCHNEPP,  
Legrand Chairman and CEO*



*Our aim is to position ourselves as a key player for connected buildings - in both the residential and commercial sectors. Thanks to Eliot, our connected devices program, and to Works with Legrand\*, the physical embodiment of our approach to interoperability, our connected product range is growing and our partnerships are increasing, which is allowing us to constantly enhance the user experience by multiplying the number of services to which users will have access using our solutions. Our presence at CES is also a strong sign of our technological advances involving the Internet of Things and artificial intelligence. Advances that enable us to genuinely make the user the focus of our developments.*

\*Works with Legrand is the system that allows third parties to connect to Legrand's products.



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## Legrand at CES 2018, from all angles



### Facilitating the emergence of connected commercial buildings

- 1** With DLM (Digital Lighting Management)
- 2** With the "Guest Room Management" solution

### Experiencing the connected home

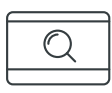
- 3** With Classe 300, the first connected video door entry system
- 4** With Smart Lighting Controls from the radiant® Collection

### Building infrastructures and the interoperability of solutions

- 5** With Céliane™ with Netatmo
- 6** With the first connected car by Renault

### Enhancing the user experience thanks to artificial intelligence

- 7** With Ivani, an experimental way to use devices to adapt to the user's behavior



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# Building infrastructures and the interoperability of solutions - the basis for the connected experience

**User experiences go beyond the perimeter of a building. They are united by different ecosystems, be they sectoral (building, transport, leisure, insurance), technological (Google, Apple, Samsung) or service-related (energy management, security, assisted living).**

Therefore, it is perfectly natural for Legrand to become involved in all these ecosystems, in order to provide its users with enhanced experiences. To do this, the Group is working with numerous partners (large groups, start-ups, GAFA or technology partners) and is involved in numerous alliances, in order to develop a product range that is accessible to everyone, specifically thanks to an adapted infrastructure.



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*Thanks to its architecture, the Legrand Cloud incorporates our partners' concerns and guarantees a scalability of services, while ensuring the security of data. It is an essential prerequisite for the development of connected buildings.*



*Christophe DEJOIE,  
IT Architecture and Expertise  
Manager for Legrand*

# 1. The necessary transformation to an adapted infrastructure

**For connected devices to communicate and be sustainable, and for third party partners to trust Legrand, there is a need not only for efficient networks, but also for a reliable and powerful infrastructure that allows them to connect permanently and securely within buildings: this is the third cornerstone of Eliot, alongside interoperability and connected solutions.**

## 1.1 • THE CLOUD LEGRAND

The role of the cloud is to host and secure data. As a common base, the Legrand Cloud allows user identities, interoperability, uses and data to be managed. It is a way of streamlining and improving security and, thereby, facilitating interoperability.

The Legrand Cloud and API (Application Programming Interface) are both developed using Microsoft Azure. The choice of Microsoft as a preferred partner facilitates development. Thanks to its scalable system and strong capacity for growth, it encourages openness to the fields of artificial intelligence and offers users equipped with Legrand's connected solutions the widest possible choice of applications.

The API system allows Legrand to open up its solutions to a group of applications, which can then communicate with each other and mutually exchange services. This makes it possible, for example, for La Poste<sup>[1]</sup>'s digital hub to retrieve information from Céliane™ with Netatmo in order to provide an assisted living service for a person at home, with their consent.

**LEGRAND ET MICROSOFT AZURE:  
an international technology partnership speeding  
up the development of smart buildings and  
enhancing the user experience.**

At CES 2018, Legrand and Microsoft will be formalising the interoperability of their technologies to enable the development of smart buildings to be speeded up and to, thereby, enhance the user experience. Together, they will be developing new connected solutions, which will be based on Legrand's product lines within the Eliot program, on the one hand, and the Microsoft Azure solution, on the other hand. The aim is to provide users with new experiences and to offer them new services via a cloud platform. This will favour the combination of Legrand and Microsoft solutions, as well as their scalability, which enables the benefits for clients to be multiplied. This international deployment will be presented at CES 2018.

*Together with Microsoft, we are constructing the solutions that will meet market needs in the near future. This requires serious investment in infrastructure, which is one of our current priorities. With Azure, we have access to unrivalled computing power.*



*Jérôme BOISSOU,  
Eliot Program Manager*



[1] See page 13, "Focus / La Poste's Digital Hub Works with Legrand".





## 1.2 • INNOVATION IN INFRASTRUCTURE

Connected buildings require an infrastructure that is increasingly efficient and robust. The flow of data and its security are based on equipment produced by Legrand. As a specialist in electrical and digital building infrastructures, Legrand is continually expanding its product range and innovating in terms of structured cabling.

The new range, named LCS<sup>3</sup>, guarantees reliability, security and performance. Its high density and fiber optic products and its numerous technological innovations enable it to meet the specific needs of data centers in terms of high-performance infrastructures. LCS<sup>3</sup> guarantees outstanding network performance. Installation and maintenance are simplified. This new range satisfies performance criteria in terms of density and modularity, which enables the size of technical equipment rooms to be significantly reduced and spaces to be reconfigured.



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*Interoperability is key to the success of connected buildings. Thanks to our connected and interoperable solutions, we enable third parties to generate an array of services to be offered to users. In this way, we are ensuring that their interests and experience are the focus of our concerns.*



*Jérôme BOISSOU,  
Eliot Program Manager*

## 2. Interoperability at the heart of ecosystems

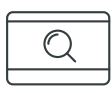
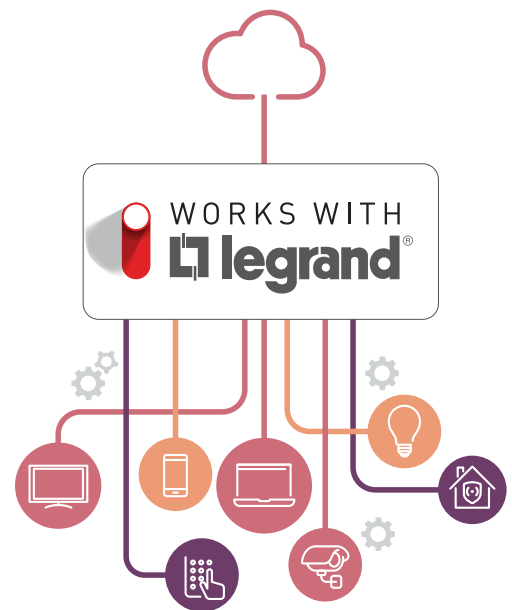
For Legrand, interoperability is an essential condition for development of the IoT. In order to be at the heart of a connected building's ecosystem, Legrand has opted for open and interoperable languages and APIs. The latter must be able to interact with third party systems and exchange data, with the aim of providing users with additional benefits.

To guarantee this interaction and to allow everyone to deliver new services to users with the aid of Legrand products, the Group is providing its partners with a means of connecting to Legrand's solutions. Open to both developers and manufacturers, to small companies and digital giants alike, Works with Legrand is already supporting numerous technological and commercial partnerships.

### 2.1 • WORKS WITH LEGRAND: CONNECT TO LEGRAND'S SOLUTIONS

At CES 2018, Legrand is announcing the launch of its partnership program, Works with Legrand, which is designed to enable third parties to connect to its solutions in order to offer new services and functionalities, hence, to create added value for the end user. These third parties include start-ups, large groups, manufacturers and service providers. Works with Legrand is also aimed at opinion leaders, project managers and other decision-makers (project owners, distributors, etc.) seeking inspiration for the development of new experiences.

Works with Legrand is embodied by a portal, which offers access to all resources providing the means to interact with Legrand's products: documentation, language, APIs, etc.



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*Works with Legrand is accessible to everyone and opens us up to an enormous variety of partners. It illustrates our ambition to contribute to promote innovation and the development of new services beyond just the Legrand ecosystem.*



Jean-Pierre VIANNAY,  
Legrand Strategy Advisor

## 2.2 • BOTH TECHNICAL AND STRATEGIC PARTNERSHIPS

The partnerships formed by Legrand have targeted partners with very diverse profiles: large groups, electronics giants, an IOT platform and innovative startups, who share the aim of putting users at the heart of smart homes and smart buildings. These partnership are both technological (i.e. focused on innovation and the development or co-development of new high added-value applications) and strategic for access to markets, co-marketing, examples of usage and to encourage the emergence of new services for both users who are professional or individual consumers.



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### 2.3 • THE OPENNESS OF LEGRAND'S VOICE ASSISTANT SOLUTIONS (GOOGLE HOME, AMAZON ECHO, ETC.) IS THE PERFECT EXAMPLE OF SUCCESSFUL INTEROPERABILITY

#### FOCUS

#### AMAZON ECHO WORKS WITH LEGRAND <sup>(2)</sup>

Today, voice control is essential. Legrand is working with the Amazon Echo voice assistant to devise new services for users.

When a user wants to adjust his/her heating, he/she talks to the Amazon Echo voice assistant, which accepts his/her instruction. The order to change the temperature is sent to the Smarther thermostat, which executes it. Alexa, the voice of Amazon Echo, then tells the user that the temperature has been adjusted.

The voice information and the interoperability of the two clouds make this possible. The Legrand and Amazon clouds work together to create an enhanced experience and greater convenience for the user.

Personal assistants, like Amazon Echo, are also able to anticipate and adapt to users' requirements by gathering and analysing data. Machine learning and the artificial intelligence of connected devices are exploited for the user's benefit.



[2] See page 24, "Voice recognition and image recognition: the foundation stones of artificial intelligence".



*The fact is, you are no longer alone in your car. You are now connected to a vast ecosystem.*



*Benoit JOLY, Director of the Connected Vehicles Range for Renault*

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## RENAULT WORKS WITH LEGRAND

As part of the development of its first connected vehicle, Legrand was chosen by Renault to offer users a seamless experience between their homes and their cars.

The main benefit is to be able to use the R-Link 2 dashboard screen to receive information from and perform operations in the home. This means that the car and house are connected, enabling users to retain control of their homes when they are not there.



**Users are connected to their homes from their cars, enabling them to respond in the following situations:**



### Someone is ringing my doorbell!

In this case, the R-Link 2 screen in my car displays an image of the Classe 300 connected door entry system and I can interact with visitors. If it is my children who have forgotten their keys again, I can open the door using my connected lock.



### Did I remember to turn off the hall light?

I'm not sure, I think I left a light on in the hall. I can control it from my car and can switch off the light remotely thanks to the Céliane™ with Netatmo solution.



### I was away for the weekend, the house must be cold!

On my way home, I instruct my Smarterther connected thermostat to increase the temperature in the house. It will be warm when I get home!

Here too, the user is the focus of development. This partnership between Renault and Legrand offers improved security, better energy management and far greater convenience.



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*We are working with  
La Poste on the emergence  
of new uses and services  
based on the IoT.*



*Emmanuel BALLANDRAS,  
Vice-President Partnerships  
and External Relations*

**FO  
CUS**

## LA POSTE'S DIGITAL HUB WORKS WITH LEGRAND



LA POSTE

Legrand is a long-term partner of La Poste. The partnership consists of technological integration between La Poste's digital hub and the Legrand Cloud, making the mass-market digital hub application compatible with all Legrand's connected solutions.

The first solution covered by the partnership is Céliane™ with Netatmo connected equipment. This means that La Poste is able to provide services via Legrand's connected switches including, specifically, assisted living services.

La Poste's digital hub and Legrand were chosen together by Vinci Immobilier to equip apartments and villas near Toulouse. This project, Résidence Cérès, will be completed in the first quarter of 2018. The homes built in the first eco-district in the Midi-Pyrénées region are specifically equipped with Céliane™ with Netatmo solutions. Users will benefit from the convenience of these solutions and, using La Poste's digital hub application, will be able to control their Legrand connected devices and those of other brands and, thereby, define useful everyday usage scenarios (night mode, "coming home" mode, "leaving home" mode, holiday mode and water consumption monitoring).

### 2.4 • STRATEGIC ALLIANCES

In addition to partnerships, as an active member of global alliances, Legrand is committed to the development of connected devices. The aim of these alliances is to establish common standards and languages, enabling connected devices to communicate with each other and, thereby, to reduce obstacles and facilitate their adoption by the greatest possible number of people.

**zigbee  
alliance**

Legrand is one of the most long-standing members of the ZigBee® Alliance. ZigBee® is the wireless, open and global standard for the Internet of Things, designed to make simple and smart objects work together, in order to increase convenience and efficiency for users in their everyday lives. The Zigbee® Alliance will be staging a demonstration with Legrand on its own stand at CES.



Legrand is an active member of the Open Connectivity Foundation, one of the most important international consortiums formed to promote the worldwide adoption of products, systems and services from the Internet of Things based on common technology.



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# Experiencing the connected home



*With Eliot, we are enriching our residential facilities offer by adding connected and interoperable products - switches, door entry systems and thermostats - to traditional home automation systems, which enables us to increase the number of services we can offer users.*



Franco VILLANI, CEO of BTicino

**The connected home is a reality now that meets a growing demand from users. According to a survey carried out by IFOP's Observatory of Connected devices in 2016, "56% of French people intend to buy a connected device". Devices which, once they can communicate with each other, transform our relationship with the home.**

Indeed, connected home solutions are now integrated by architects and single-family home builders, and are part of the building programs managed by France's biggest property developers. Proof of this is that in the year 2017-2018, the top 5 property investors all decided to launch a connected housing program. The same goes for commercial developments with hotel groups such as Accor and Marriott.

Thanks to the IoT and its Eliot program, Legrand is constantly innovating to make the connected home simpler to access and use with an ever-increasing choice of solutions. In addition to its recent Céliane™ with Netatmo connected solution, the Group intends to connect other ranges such as Arteor and Valena, but also develop new products designed to be able to communicate and come up with the concepts that prefigure the future.

Legrand's promise remains unchanged: to improve all users' experience, whether they are installers or end users.

## FOR LEGRAND, THIS PROMISE IS REFLECTED BY:

- Offering new services;
- Simplifying complex functions;
- Facilitating installation and maintenance,
- Offering scalable, quick and simple solutions suited to the user's needs, desires and habits.



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## Smart solutions for the connected home

LEGRAND | CES 2018



### SMART LIGHTINGS CONTROLS FROM THE RADIANT® COLLECTION

#### A first on the American market

"Smart Lightings Controls from the radiant® Collection" is a new connected wiring devices solution available in the USA. It is part of the radiant® range. This control solution enables you to control not only lights and electric sockets, but also other connected devices in your home. You can do this locally or remotely with a switch, a smartphone or vocally.

"Smart Lightings Controls from the radiant® Collection" is compatible with over a hundred ecosystems (Google, Amazon, Samsung SmartThings and many others) and can be integrated simply into homes because it uses WIFI and Thread (a connected devices connection partner system) depending on the specific needs of users. It is a first on the market.

This can be perfectly integrated into other connected or non-connected solutions with its discreet and elegant design and its features. Its great compatibility and the fact that it is easy to install and use means that you can have an accessible and customised experience of comfort in the connected home.



*This solution is the next big step forward for the Group in terms of connected homes. It enables users to equip themselves however they want, starting with a single room or the whole house.*



*John SELLDORFF, President and CEO of Legrand North & Central America*



Thread based products are expected to be available around April 2018.

Wi-Fi based products are expected to be available around May 2018.



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### CLASSE 300

#### **The first connected video door entry system on the market**

The new Legrand Classe 300 is the first connected video door entry system on the market, and makes it possible to interact by voice and image and control access to the home, on site or remotely, via your smartphone or tablet or car.

The Classe 300 connected video door entry system is part of our interoperability strategy and is compatible with Amazon Alexa, a Samsung camera and the Yale connected lock so that users can fully enjoy both comfort and security

The Classe 300 connected video door entry system enables users to see and control access to their home wherever they are. It offers its users both security and peace of mind.



*In some countries Eliot connected solutions are helping categories of products to evolve. Being connected is becoming standard. In Germany and Belgium, the Classe 300 has virtually superseded all other categories of door entry systems.*

*Frédéric XERRI, Vice-President Export*



**From € 1,290.00**  
Excluding tax, price observed in France on  
18/12/2017, excluding installation costs.



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## LEGRAND SMARTHER THERMOSTAT

.....

### **When temperature goes hand in hand with comfort and saving energy**

Smarter is a new flush or wall-mounted connected thermostat to manage heating and air-conditioning. With an innovative design and touch-screen interface displaying the room temperature and humidity level, these new Legrand connected thermostats enable the setpoint temperature to be adjusted or the "boost" function to be activated, remotely or locally.

Thanks to the strategic partnership between Legrand and Amazon Echo, this thermostat is voice-activated and warns the user if any changes are made. Ease of use is at a maximum here: it becomes intuitive and adapts to the needs of the user in real time.

The Smarter connected thermostat offers more intuitive heating management which enables the home's occupants to adjust the temperature to their needs in real time and to control their use of heating to optimize energy consumption. Smarter gives its users the comfort of a home whose heating is adapted to their lifestyle: with the remote control, they can plan their return home and activate the "boost" function so that the home is warm and welcoming when they arrive. Locally, they can control the thermostat manually or via voice.



**From €190**

Excluding tax, price observed in France on  
18/12/2017, excluding installation costs.



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## CÉLIANE™ WITH NETATMO CHOSEN BY BNP PARIBAS REAL ESTATE

### A control solution for the connected home

The expertise of Legrand and Netatmo has made it possible to develop a high value-added solution which takes the concept of the connected home further, and demonstrates the commitment of Legrand and its Eliot program in this market. Legrand and Netatmo have worked closely together to offer a better user experience which offers more day-to-day comfort and security.

### World first: the first residential building with connected devices inaugurated in France

Even before its official launch in January 2018, Céliane™ with Netatmo was exclusively chosen by BNP Paribas Real Estate for the first residential building incorporating connected devices in France. Everyone has their eyes on the project inaugurated in October 2017 on the edge of Paris. The interoperability of the cloud and Legrand solutions enables occupants to make the experience of the connected home compatible with IOS ("Home" by Apple), Android and other platforms such as La Poste's digital hub, Samsung's SmartThings, Google Home, Alexa by Amazon, etc.



BNP PARIBAS



Kevin CARDONA,  
Director of Innovation, BNP Paribas Real Estate

*We were won over by Legrand's connected offer. We chose Céliane™ with Netatmo first and foremost because it is a system that is very simple to use and install. But also and above all because it is a scalable system where you can anticipate the digitalization of ways of living.*



Benoît COQUART,  
Legrand Executive VP France

*This is the first building entirely fitted with this solution, which was presented and rewarded at CES 2017, and is controlled via the Apple Home Kit application and compatible with La Poste's Digital Hub. Thanks to Céliane™ with Netatmo, users can control access to the residence, heating, lighting and electrical appliances with their voice or using a smartphone. They can therefore control their energy consumption better and enjoy a smart infrastructure offering comfort and responsiveness.*



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# Facilitating the emergence of connected commercial buildings

**Commercial buildings (offices, shopping malls, hospitals, hotels, etc.) can also be fitted with connected solutions to improve the experience of users and offer those that operate them better energy management. The Eliot commercial offer addresses these issues by offering solutions that are easy to implement and maintain, scalable and interoperable, and are for both operators of buildings and their occupants.**

For operators, the challenge is to facilitate the management of commercial buildings and particularly maintenance and energy management.

For occupants, the objective is to improve their comfort and enable them to have new experiences with Legrand products.

Applied to commercial premises, the Internet of Things enables a building to take on a new dimension. The data gathered from the various connected systems in its infrastructure provides leverage for added value, and the building becomes a genuinely user-oriented service platform.







## DIGITAL LIGHTING MANAGEMENT (DLM)

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### An open and integrated lighting management platform

DLM (Digital Lighting Management) is a lighting management solution for commercial buildings in the USA. As a scalable system which is simple to install, it optimizes the building's energy performance and enhances the well-being of its occupants. A survey by the Lawrence Berkeley National Laboratory released in the USA in 2001 showed that we spend on average 87% of our time inside buildings, with only limited access to daylight and green areas.

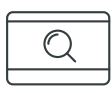
Legrand has teamed up with innovative partners to reduce the negative effects of exposure to artificial light by developing an offer that is complementary with DLM: Human Centric Lighting (HCL). This involves providing easy-to-fit and easy-to-use solutions designed to limit the harmful effects of artificial light on physical and mental well-being, such as eye irritation, headaches, body clock desynchronization, emotional distress, in some cases even depression.

With Lumenetix, Legrand enables not only to vary lighting intensity but also to adjust the color temperature of white light via controllers that are incorporated into Pinnacle lighting fittings and can be controlled by DLM.

The aim is to ensure the light suits the circadian cycle by introducing variations in intensity of its white component. Thus, lighting that closely tracks natural everyday cycles and body rhythm provides occupants with enhanced comfort, positively influencing their well-being.

Legrand is also working jointly with the start-up BIOS on developing easily installed lighting designed to suit cases of prolonged exposure. In this case, lighting is permanent, but its clarity and intensity (warm white vs. cool white) are calculated to be compatible with human bodily needs. This partnership means that Legrand is genuinely developing made-to-measure lighting solutions with a dynamic light spectrum to provide all the benefits of healthy lighting.

Thanks to both its own technologies and partnerships, Legrand provides lighting solutions that are easy to install in commercial sector buildings and centered on their occupants, whose well-being is the core concern.



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*We are proud to be innovating with industry leading partners to get closer to revolutionizing the guest experience, along with hotel operations and hotel construction. Together with Marriott and Samsung, we are well on our way to creating the hotel room of the future.*



Ken FREEMAN,  
Senior Vice President of Demand  
Creation, Legrand NCA



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**THE "GUEST ROOM MANAGEMENT" OFFER**

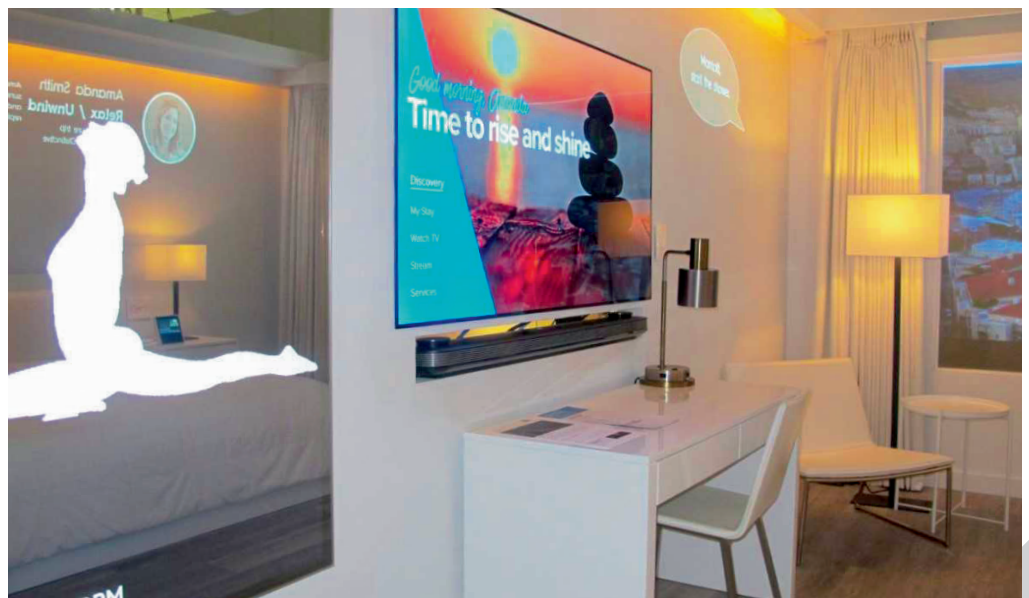
**Legrand and Samsung have teamed up with the Marriott International group to improve the management and comfort of hotel rooms.**

The "Guest Room Management" offer is a comprehensive solution for managing hotel rooms. The Marriott hotel group has formed a partnership with Samsung and Legrand in order to introduce connected devices into the world of hotels to give its customers a unique experience. This strategy also makes it possible to meet the hotel group's sustainable development objectives. The Legrand solutions can be seamlessly integrated into the SmartThings platform, the Samsung cloud. Marriott wants to take its establishments and its visitors into the era of the hotels of the future where experience is put at the heart of the business.

In particular, this partnership enables simpler access control and customized scenarios which can be voice-controlled and are conducive to the guest's relaxation and productivity. Their client profile is customized and updated as they move around so that each Group hotel is able to precisely satisfy their expectations.

The combination of Samsung and Legrand products makes it possible for multiple application and connected device (IoT) systems to communicate with each other to meet the requirements of guests and optimize operations. These advances benefit all users: both guests and hotel managers. Travellers will benefit from these advances in the coming years.

In addition to programming the lighting, the heating and services like a wake-up alarm or setting the shower to come on at a specific temperature, the fitted rooms and suites can create atmospheres and offer activities such as a yoga session with a mirror as the interface.



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# Enhancing the user experience thanks to artificial intelligence

At CES 2018, where artificial intelligence is in a prime position, Legrand is sharing its vision of this major technological advance which opens up new perspectives and promises to revolutionize our ways of living and our day-to-day uses. According to IDC, the artificial intelligence and cognitive systems market will reach \$12.5 billion in 2017, which represents an increase of 59% compared to 2016. IDC also predicts annual growth of 54% over the next 3 years, and the market is set to be worth \$46 billion by 2020.

Legrand is convinced that these technologies enable significant enhancements of the user experience both for installers and end users, and has therefore been closely examining voice recognition, image recognition and self-learning solution technologies in particular.

## WHAT DOES ARTIFICIAL INTELLIGENCE MEAN FOR LEGRAND?

**Artificial intelligence is the ability to collect, manage and interpret the data in an environment in order to be able to act accordingly in the same environment.**

- PREDICT AND ACT: to learn and understand how products and solutions are used by users;
- DISCUSS: to engage in a dialogue with users;
- VIEW: to be able to distinguish objects and shapes and recognize them.



## For Legrand, artificial intelligence applies in 2 distinct ways

### 1. BY ADDING INTELLIGENCE TO OUR SOLUTIONS

For example, Legrand is undertaking prospective studies in France and in Italy to be able to remotely diagnose an installation and even anticipate a fault. The challenge is to simplify the life of occupants and users of buildings with a chatbot-type virtual assistant. Another example of augmented intelligence added to certain Legrand solutions: image recognition which can be integrated into video door entry systems. This makes it possible to offer face recognition as a way to control access. The video door entry system thus takes on a new dimension with the ability to not only see but also recognize visitors, which ensures that the building has a higher level of security.



*Machine Learning, voice recognition and big data: integrating artificial intelligence into connected devices and related services will enable us to further improve the features and capabilities for the end consumer and the installer.*



Ernesto SANTINI, Vice-President  
Innovation & Systems, Legrand

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### IVANI, SERVING THE USERS

In the USA Legrand works with Ivani, a technological partner, on a project to anticipate behavior patterns. The idea is simple: by continually observing a consumer's behavior, a switch will be able to anticipate their habits.

Ivani provides sensing of presence rather than just movement. This solution has various applications particularly for the home, security facilities, hotels and commercial buildings. In the examples mentioned, Ivani enables users to enjoy lighting (for example) as much as they need to, and it ensures that the devices are activated when someone's presence is detected. This avoids wasting energy and lights being turned on inadvertently.

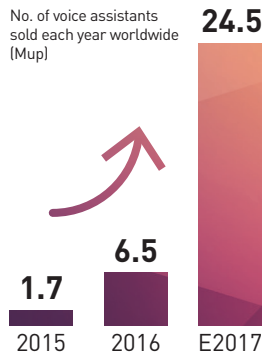
The partnership thus enables better control of energy consumption. In addition, Ivani uses existing connected devices as presence detectors. The installation is therefore straightforward.

Ivani is really there to serve users, facilitating their day-to-day lives by organizing scenarios for them such as a lighting path, a particular atmosphere to watch a movie, etc.



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## 2. BY CONNECTING THIRD-PARTY ARTIFICIAL INTELLIGENCE SERVICES TO OUR SOLUTIONS



### Voice recognition and image recognition: the foundation stones of artificial intelligence

Legrand's first studies of artificial intelligence involved image recognition and voice command, which offer users real comfort. After Apple and Siri, Amazon and Alexa, Google and Cortana, all of which are already Legrand's partners, the Group has gone a step further by collaborating with Samsung and its new assistant. The Eliot solutions are therefore interoperable with the main voice assistants on the market. This enables users to simply use in the home the voice command to which they are already accustomed on their smartphone.

Sales of voice assistants are growing exponentially worldwide (see diagram). More and more users are enjoying the simplicity and comfort of voice command, which can also be used for building equipment.

The joint use of a voice assistant and Legrand connected devices offers increased comfort and enables occupants to take control of buildings so that their requirements are better taken into account and satisfied. Face recognition can also improve a building's security by restricting access with connected door entry systems. The market for voice assistants is growing fast worldwide and they offer a huge range of uses. Legrand facilitates and encourages partnerships through its Works with Legrand program.

### Assisting and responding to changes in behaviour

Legrand devices are compatible with applications or systems that use artificial intelligence to enable the automation of certain actions. Works with Legrand oversees and facilitates the use of such solutions with the Group's products. Systems are now able to anticipate users' requests and their behavior.

Legrand collaborates on innovative projects which make it possible to imagine another relationship between users and connected buildings. Through Works with Legrand, the Group helps and encourages developers and entrepreneurs by facilitating their access to its expertise and facilities.

## FOCUS

### CRAFT AI

The partnership with the startup Craft Ai, the winner at the Legrand/Samsung Artik hackathon organised at Viva Tech 2016, is another example of Legrand's open approach. Craft Ai adds an artificial intelligence dimension to smart buildings. It makes it possible to imagine a self-learning building, which learns about users' habits by gathering data from the various connected products in the building.





### **Data security and respect for users are priorities at Legrand**

Legrand is aware of the challenges surrounding data security, and therefore takes every precaution to reduce the risk of its solutions being used for fraudulent or irregular purposes. The aim is to provide new experiences without infringing on the privacy or security of its users, while remaining transparent and clear about the rules for using its data.

The Group is actively involved in the work of Acsel (the French digital economy association, the French hub of digital transformation), and remains loyal to its development policy which complies with applicable standards and regulations, based on ongoing international studies. ISO 27001 certification for the entire Legrand Cloud, which is currently pending, will give users additional security guarantees. In France, Legrand is very closely monitoring the implementation of the new GDPR (General Data Protection Regulation), which will come into effect in 2018.



### **The security of the data collected is a major challenge for Eliot**

The data from Legrand's connected solutions is transferred using secure digital infrastructure in the Legrand Cloud, and meets a very high level of security. The data is then used on servers or made available to third-parties (service providers) with standard data processing tools. This processing by third parties is only possible if the user agrees to it with an Opt-in, while complying with the locally applicable legislation.

To enhance the security of its connected solutions, Legrand implements PIAs (Privacy Impact Assessments) in order to effectively measure and minimize the impact of personal data processing on user privacy. Regular security audits and intrusion tests are also carried out internally and by leading cyber-security companies. They are carried out in the form of hacking simulations throughout development and right up to market launch.

Also, interoperability at different levels makes it possible to store a large amount of data locally when this is sufficient to ensure that users enjoy a relevant usage, such as turning on and switching off lights at a local level, seeing who is at the door from your living room, or opening the shutters with a local control. In all of these examples the data stays in the home's eco-system and only ends up on the web if the user accepts it.



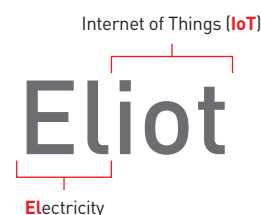
# The Eliot Program

Eliot makes it possible for each person, installer, end user or partner, to connect to the Legrand world.



Eliot was launched by Legrand in 2015 and is an amalgamation of 'Electricity' and 'IoT' (Internet of Things). As connected objects become the norm, the Eliot program aims to speed up the deployment of the Internet of Things in Legrand's offering.

The Group is developing new connected offers and, via 'Works with Legrand', is accelerating its digital development by assisting everyone who wants to connect to the Legrand world.



## 1 OBJECTIVE: TO IMPROVE THE USER EXPERIENCE

By simplifying everyday life, facilitating the installation and enabling third parties to deliver services with its solutions, Eliot is increasing the long-term benefits for users.

## 3 CORNERSTONES

- Connected solutions
- Interoperability, enabling third parties to deliver services with Legrand solutions thanks to 'Works with Legrand'
- Sustainable digital and electrical infrastructure for buildings

## 4 BENEFITS

Security, comfort, energy efficiency and assisted living

## 1 IDENTITY

Legrand's connected offering is identified by and identifiable with the Eliot logo.

## 1 ORGANIZATION

Two years after its launch, Eliot has entered a new stage of development focused on the user experience and led by a cross-disciplinary and multi-skilled team. Its objective is to speed up the marketing of connected solutions by using agile work methods among Legrand teams and with partners based around themes such as the user experience, data management, client support, API, IT and partnerships.

### ABOUT ELIOT

Eliot is the name of a program launched in 2015 by Legrand to speed up deployment in its Internet of Things offering. Stemming from the Group's innovation strategy, it is aimed at developing connected and interoperable solutions that provide sustainable benefits for both private and professional users.

[www.legrand.com/EN/eliot-program\\_13238.html](http://www.legrand.com/EN/eliot-program_13238.html)

### ABOUT LEGRAND

Legrand is the global specialist in electrical and digital building infrastructures. Its comprehensive offering of solutions for international commercial, industrial and residential markets makes it a benchmark for customers worldwide. Drawing on an approach that involves all of its employees and stakeholders, Legrand is pursuing its strategy of profitable and sustainable growth driven by innovation, with a steady flow of new offerings—including Eliot\* connected products with enhanced value in use—and acquisitions. Legrand reported sales of over €5 billion in 2016. The company is listed on Euronext Paris and is a component stock of indexes including the CAC40, FTSE4Good, MSCI World, Corporate Oekom Rating, DJSI World, Vigeo Euronext Eurozone 120- Europe 120-France 20, and Ethibel Sustainability Index Excellence. (ISIN code FR0010307819).

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