

DIGITAL TECHNOLOGY AND THE CHALLENGES OF SOCIAL HOUSING

Services to building users and the region SOCIAL HOUSING

The Social Housing Committee

The SBA, reflecting on value-added services and the underlying economic models that can be derived from a connected building, very quickly identified the social housing sector as a pioneer to test and introduce the services and as a major economic player of the building industry. It therefore decided in early 2016 to set up the Social Housing Committee.

This committee brings together local authority landlords and diverse and complementary players from the social housing and building ecosystem. It aims to offer social housing landlords an approach that drives the development of services based on connected social housing to meet the main challenges of their field.

This second edition of the SBA thema collection is intended to demonstrate the value for social housing landlords of including an R2S approach in their strategic thinking and in the implementation of their projects.

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Bruno Belpeer, VILOGIA ● Rémi Bonnet, GRAND PARIS HABITAT ● Fabien Bricault, EDF, BRANCHE COMMERCE ● Jacques Bucki, HESTIA INNOV ● Éric Cassar, ARKHENSPACES ● Thierry Chambon, ENERGISME ● Christophe Chanu, GRAND PARIS HABITAT ● Jean-François Chariot, GETRALINE ● Joseph Choueiri, SFR ● François Correze, ENGIE ● Laurent Cuvelier, WEBINAGE ● Patrice De Carné, SBA ● Michael Delaroche, TECHNOLOG ● Michel Ducommun-Ricoux, PROXISERVE ● Willy Freulon, VALLOIRE HABITAT ● Gilles Genin, INGETEL BET ● Hafida Guebli, NEYB'S ● Tristan Hamon, IMMOBILIERE 3F ● Hervé Lasseigne, ASCAUDIT ● Laurent Lefay, ISTA ● Christophe Lheureux, IMMOBILIERE 3F ● Gaé Metzler, HENT CONSULTING ● Catherine Moulin, CERTIVEA ● Paul Raad, WIT ● Jean-Philippe Regnier, INTENT TECHNOLOGIES ● Christian Rozier, URBAN PRACTICES ● Arnaud Strappe, OGGA.

ENCOURAGING COLLECTIVE THOUGHT ON THE **MANY** BENEFITS OF DIGITAL TECHNOLOGY

For the past five years, the SBA has been assisting the development of the building sector in the shift towards digitalization which impacts the way buildings are designed, built and operated and thereby aims to promote the quality of life of the occupants and take up the challenge of improving the collective standards of living.

This shift, which is taking place alongside and is complementary to the energy and environmental transition, raises the question of conciliating these two transitions so that together they may contribute to the operational efficiency of the building and the development of new services. These themes are central to the thinking and the work of the SBA, which relies on players in the sector, supports the sharing of experience, helps to promote innovative projects and develops the framework and the programs to ease these transitions.

Encouraging collective thought on the multiple benefits of digital technology

in addressing the pressing issues and challenges of social housing and the need to develop

an overall strategy to increase the added value of the projects undertaken

In France, social housing accounts for more than 13.5% of accommodation and as such is central to these developmental issues. Owing to the current environment, social landlords are required to reinvent themselves and seek new solutions which must appeal to citizens from all walks of life, especially the most vulnerable citizens, while adhering to tight budget restrictions. The SBA has decided to publish this guide for all social housing stakeholders as a means of providing them with the keys to successfully achieving these goals. It follows on from the R2S (Ready2Services) reference framework for connected and communicating buildings and the “Connected, Solidarity-Based and Human-Centric Buildings” charter published by the French Ministry of National Cohesion in December 2017.

This guide discusses the social housing context in France, provides an overview of the services in the digital age illustrated through a few practical examples, and offers recommendations for implementing these transformation projects.

Its goal is to stimulate collective thinking around the multiple benefits of digital technology and the need to develop an overall strategy to enhance the quality of the projects being currently undertaken.

In light of future changes, digital technology is a genuinely agile solution for providing tailored services and a tool to enhance attractiveness for the players in the social housing sector. With the R2S, the SBA has met the challenge of reconciling the lengthy building operation time with the agile and short time of digital technology!

Paul Raad
CHAIRMAN OF THE SOCIAL HOUSING COMMITTEE

Christian Rozier
CHAIRMAN OF THE SERVICES TO USERS
AND REGIONS COMMITTEE

WHAT THE FIGURES SAY

CONCERNING HOUSING



4.7 million
rented units¹



Vacancy of rented accommodation (vacancy of more than 3 months excluding technical vacancy):
1.2% OPH² (Public local organisation for social housing)
0.7% SA d'HLM/ESH² (Low-income housing companies / Social housing companies)
1.9% SEM³ (Semi-public companies)

PRODUCTION AND INVESTMENT OF THE LANDLORDS



€ 17.0 billion
in investments in 2015
by the social housing
organizations

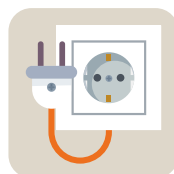


In 2016⁶, **345,500**
units were delivered
including 145,000
individual and 200,500
collective

FOCUS ON OPERATION



Cost of operation and
technical maintenance:
46% of the overall cost
of a social housing unit⁴



44% of energy
consumption in France
stem from buildings
(French Ministry of Ecological
and Solidarity-based Transition
- 2016)

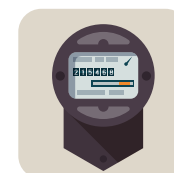
SOCIAL AND SOCIETAL



Over **10 million**
people (15% of
households)
accommodated within
low rent social housing
units (HLM)¹



Aging of the population:
21% between 50 and
64 years of age
28% > 65 years of age
(INSEE 2012)



1 in 5
households
(i.e. 12.2 million
individuals) facing fuel
poverty
(Fondation l'Abbé Pierre, 2017)



Over **60%** of tenants in
the social housing sector
are connected via a
computer, a tablet or a
smartphone⁵

ENERGY



36% of social housing
stock currently ranks
amongst the least-energy
consuming housing units
(A, B or C labels),
compared with 14% of all
main residences¹



24% of the social
housing stock currently
ranks amongst the
housing units producing
the least amount of
greenhouse gas
emissions (labels A, B or
C), compared with
approximately 43% of all
main residences¹

1. Source: USH (Social housing in figures ["Les HLM en chiffres"], 2017)
2. Source: BOLERO-web database (MLHD / DGALN / DHUP / LO) Values as of 31 December 2014
3. Source: French Association of local public companies (EPL), 2014

4. Source: Action Tank Entreprise et Pauvreté (Study on the overall cost of social housing, February 2013)
5. Source: Respublica and Atelier des giboulées (Survey on the use of digital technology in the relationship between social landlords and tenants ["L'Usage du numérique dans la relation bailleurs sociaux-locataires"], December 2014)
6. Source: Datalab - French General Board for Sustainable Development - July 2017

ONE REALITY AND **MANY** CHALLENGES

Although these figures provide an overview of social housing, what matters most is understanding the reality and the complexity of the issues and challenges that social housing has to meet:

ECONOMIC AND HERITAGE-RELATED ISSUES

- Effectively target **economic investments**.
- **Control and optimize** the maintenance and operating costs of the buildings.
- **Enhance the attractiveness** of the units (limit vacancy, improve the heritage and use value).
- **Maintain the heritage value** of the buildings (limit degradation, humidity, etc.).
- **Pool infrastructure and networks** (multi-business, multi-services and a mixture of technologies) and define a common base for the services.

SOCIETAL ISSUES

- Increase the tenants' buying power: **disposable income**.
- Fight against **fuel and social poverty**.
- Improve the comfort and wellbeing of the occupants, make day-to-day life easier: **better standard of living**.
- Make **the user an active participant** in the building.
- **Improve the harmony between tenants**: strengthen social bonds, devise new methods for meeting and interacting together.
- Foster **the independence** of vulnerable individuals (the elderly, the disabled, etc.).
- Strengthen **the relationship between landlord and tenant, service providers**, etc.
- Prevent **the social and generational digital divide**, a new obstacle on the employment market for competitiveness and access to services.

ENERGY ISSUES

- Simplify the management of **energy performance** (measure, analyze, compare, inform, act).
- **Improve the energy efficiency** of the building (energy mix, peak shaving, management of the demand, etc.).
- Encourage **energy-saving solutions** (dimensional, use and cooperative).



- **Raise awareness and a sense of responsibility** among the “consumer” occupants (equity, distribution, environmentally-friendly behavior).
- **Reduce the carbon footprint** (CO₂ emission).

TECHNOLOGICAL ISSUES

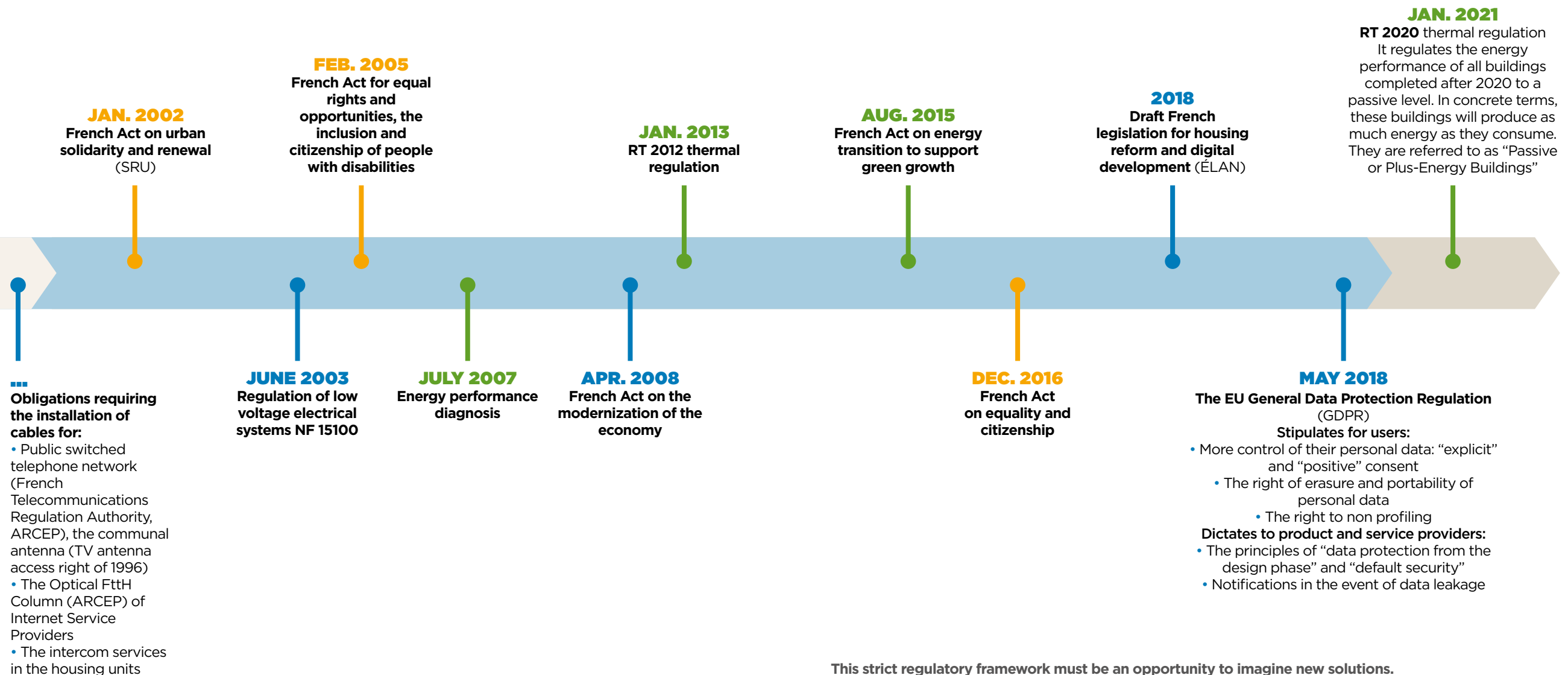
- Cater to **the users' real needs and uses**.
- Manage the volume, diversity and “expiration” of data (**Big Data**).
- **Share and make data interoperable** (API and connectors) between the various information systems.
- **Protect data** (confidentiality and security)
- **Open the systems** (standardized infrastructure) **and data** (accessible data or even open data).

These rather concrete issues will be compounded by other societal and economic changes that are harder to identify and in the face of which digital technology – and the agility that comes with it – will be one way of re-inventing social housing. Against this background, isn't digital technology also a means of setting innovative organizations apart and enabling them to be influential players?

A STRONG REGULATORY FRAMEWORK...

The French Housing Reform And Digital Development Act (ÉLAN), of which a draft legislation was published in December 2017, is intended to reform the low-rent social housing sector and especially restructure the social housing organizations with recommendations centered on pooling for improved procurement efficiency, information systems, project management and optimized use of equity.

This project builds on the many acts and standards which govern social housing both on a social level, by regulating the inclusion of all individuals, equality and solidarity as well as on a technological level for the security, protection and comfort of occupants. They also cover energy performance, where the long-term goal is set by the carbon regulation aimed at dividing the carbon emissions of buildings by four by 2050.



This strict regulatory framework must be an opportunity to imagine new solutions.

A BROAD SPECTRUM OF SERVICES

The fields, businesses, targets or benefits beings sought for the potential social housing services are quite diverse and the main risk when devising these services lies with considering only closed solutions. An overall multi-use, multi-business, multi-profile approach is essential to having the possibility, from the introduction of the first set of services, to develop towards a host of complementary services.

NEW DIGITAL SERVICES FOR RESIDENTS

- Easy access to personal services
- Disintermediation: social network platform, a tool to report an incident or to control performance, automatic transmission to the right person
- Paperless system: receipt and transmission of documents (rent receipts, occupancy expenses, etc.), payment of rents and expenses online, new transaction methods (local virtual currency)
- Community or hospitality manager, user-centric digital approach to smoothen and simplify interactions and dialogue: online collection and monitoring of claims made by residents, answers to questions, communication (building / neighborhood newsletter)
- Create local social networks to strengthen the social connection and the feeling of belonging to a local community (mutual assistance, exchange of services)

MULTI-UTILITY MANAGEMENT AND BREAKDOWN OF THE OCCUPANCY EXPENSES

- Real-time monitoring of multi-utility consumption (individual and collective)
- Management of alerts (leaks, abnormal consumption, etc.)
- Measurement and breakdown of the consumption of the locally-produced energy (photovoltaics, horizontal wind turbine, etc.)
- Analysis reports and dashboards (summary of the alerts, vacancy rates, mapping of the meters, etc.)

RAISING THE AWARENESS OF OCCUPANTS

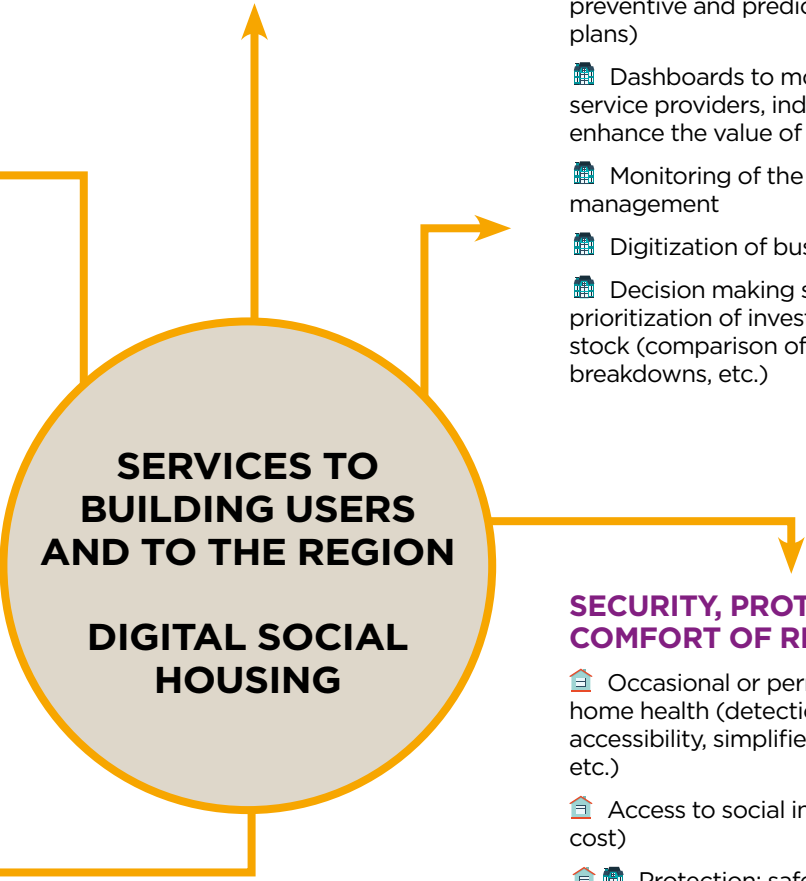
- Management and breakdown (monthly) of the occupancy expenses
- Assistance with adapting to the dwellings, equipment and operation
- Serious Games (energy coaching, maintenance of the spaces, etc.)
- Sharing of good practices and tips

TECHNICAL MANAGEMENT AND STEERING OF THE OPERATION OF BUILDINGS

- Disintermediation: sharing and pooling of the data between the landlord and its service providers (data transparency)
- Monitoring of the operational state of the equipment and alerts in the event of malfunctions or failures
- Real-time monitoring of maintenance work and schedules, e-logbook (curative, preventive and predictive maintenance plans)
- Dashboards to monitor the activity of service providers, indicators to improve and enhance the value of the service quality
- Monitoring of the billing and technical management
- Digitization of business applications
- Decision making support and prioritization of investments for housing stock (comparison of energy use, rate of breakdowns, etc.)

SECURITY, PROTECTION AND COMFORT OF RESIDENTS

- Occasional or permanent homecare / home health (detection of accidents or falls, accessibility, simplified personal services, etc.)
- Access to social internet (free or low cost)
- Protection: safety (fire, water damage, etc.) and security (theft, intrusion, damage, etc.)
- Environmental wellbeing (air quality, sound comfort, etc.)
- Quality and cleanliness, management of the living areas (monitor the work of service providers)



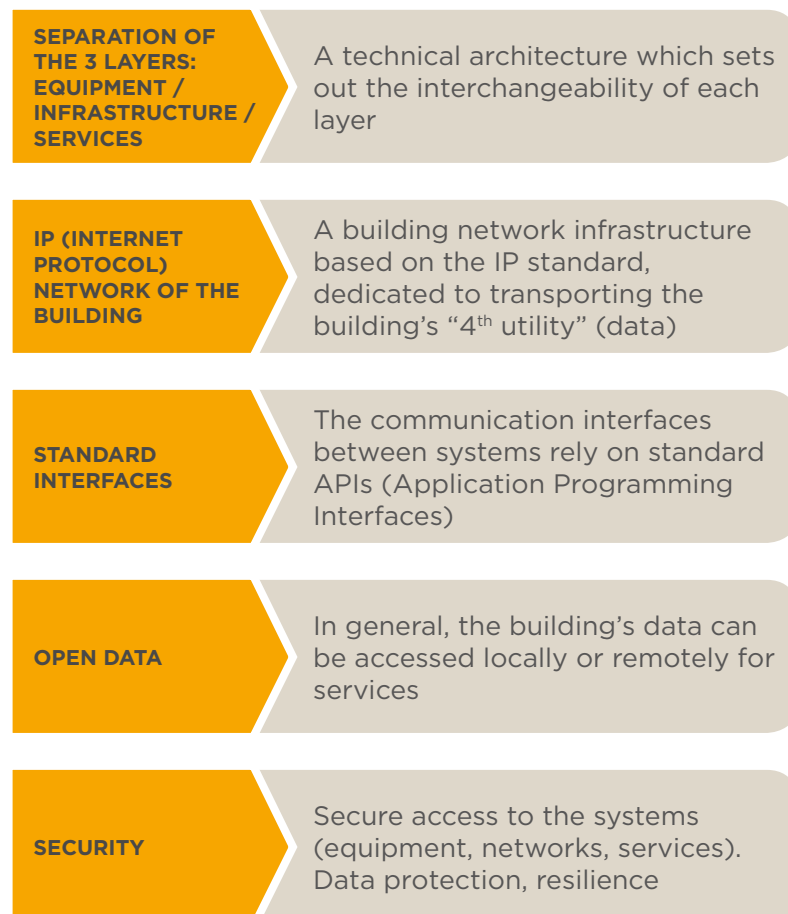
The diagram on pages 8 and 9 maps out the social housing services into five fields for easier reading. However the connections between these various fields and, above all, a common base must guide the selection and implementation of the solutions.

The use value of a building, a neighborhood or a region, will therefore depend on the ability to deliver a broad range of upgradeable services which can adapt to the various uses. To successfully rise to this challenge, the selection of the services to be introduced must go in hand with considerations regarding the optimization of the infrastructure and equipment, as recommended in the R2S approach. Ready2Services is the reference framework developed by the SBA which sets out the requirements for a building to meet the challenges of transforming uses via digital technology. It hinges on a few simple but impactful principles:

- A technical architecture separated into 3 independent layers
- A connectivity base of the building without which no communication is possible
- An IP (Internet Protocol) network infrastructure for the 4th utility of the building
- A sturdy design in all circumstances
- Digital security and protected data

BENEFITS OF THE R2S APPROACH

- **Secure the investments**
- **Promote the emergence of services**
- **Reduce operating costs**
- **Foster upgradeability of the uses and services over time**



ENSURE MAINSTREAM INTRODUCTION OF DIGITAL ARCHITECTURE WHEN UPGRADING THE ENERGY EFFICIENCY OF BUILDINGS

We need to move from a previously "passive" renovation to an **active renovation** which involves installing a pooled and communicating Ready2Services digital infrastructure, as the real **digital backbone of the building**. It therefore offers 3 successive levers:

LEVER 1: Once the building and the technical equipment have been renovated, only "active" intelligence can help the tenant and operators to reduce heating consumption: this intelligence will increasingly rely on software and applications based on embedded algorithms and intelligence (self-learning systems, predictive models, etc.).

This approach may be considered without any additional cost by slightly reducing the budget allocated to the thermal renovation and using the remainder to finance this R2S infrastructure. The gains achieved by the active dimension will easily offset the slight loss in relation to renovation of the building.

LEVER 2: After thermal renovation, sanitary hot water and electrical household appliances become the main consumption items for the tenant: the previously implemented R2S digital infrastructure can serve as a basis for considering low cost application solutions to help the tenant reduce the other consumption items (monitoring the overall water consumption, shower, leak detection, etc.).

LEVER 3: It will be possible to easily introduce all the new uses and new expectations (homecare, security, etc.) with support from the R2S infrastructure. In so doing, we will make way for all possibilities and enhance the attractiveness of the dwelling by as much.

WHAT EXACTLY DOES THIS LOOK LIKE?

Below are a few examples of the services devised, experimented or broadly introduced in the social housing sector and which provide a better understanding and appreciation of the expected possibilities and benefits.

MANAGEMENT OF SOCIAL HOUSING STOCK: ASSISTANCE IN PRIORITIZING INVESTMENTS

PROBLEM AND PURPOSE

Identify equipment with the highest failure or claim rate, the more energy consuming buildings or units in order to target priority investments.

THE SERVICE OR THE SOLUTION

Based on maintenance monitoring software, compile statistics which can be used *inter alia* to identify the boilers with the highest failure rate of the stock. Accordingly, the social landlord can prioritize the investments by opting to replace the less efficient boilers. Similarly, by compiling statistics based on the energy consumption of the buildings, the renovation operations can be prioritized for the most energy consuming buildings.

BENEFITS AND FEEDBACK

- For the manager: cost savings achieved through a better management of the boiler equipment (more efficient boilers and/or remote access control to limit maintenance operations and improve energy performance) or reduced energy consumption over the entire stock (via the renovation of the most energy consuming buildings).
- For the occupants: increased comfort, energy savings and heightened satisfaction (decrease in the number of disputes).

IMPLEMENTATION OF TOOLS TO CONTROL THE COLLECTIVE HEATING BILL

PROBLEM AND PURPOSE

Improve the control of collective heating bills.

THE SERVICE OR THE SOLUTION

Establishment of a semi-automated check of collective heating bills: paperless system for bil-



ling data flows, check of the VAT and revision formulas, check of the frequency and amount of the billed services.

BENEFITS AND FEEDBACK

- Avoid VAT errors, double-billed services or amendments not taken into account.
- Improve the relationship with the tenants through increased transparency and by enabling a better distribution of the expenses given enhanced understanding and control of the data.
- Cost savings achieved for the social landlords.

€1.4 MILLION RECOVERED FOR AN ANNUAL BILLING OF EUR 40 MILLION

R2S approach: open software applications which provide standardized access to data and enable data exchange to develop new services.

INTRODUCTION OF A PLATFORM OF DIGITAL SERVICES TO OPTIMIZE THE RELATIONSHIP WITH CUSTOMERS AND SUPPLIERS AND DEVELOP NEW SERVICES

PROBLEM AND PURPOSE

Switch from a mode where employees are not informed of the operations and events affecting the property asset to a mode where the landlord is connected to the information systems and software applications of its service providers via a digital platform. This will enable easier sharing of information and real-time notifications of all events (maintenance operations, breakdowns, etc.) affecting its asset. The platform must serve to optimize its relationship with its customers and suppliers and develop new services.

THE SERVICE OR THE SOLUTION

Software platform connected to the landlord's ecosystem which collects all the data from service providers and connected objects so that it is accessible to employees – caretakers, office staff, call center – via its web and mobile applications in order to simplify the monitoring of maintenance (real-time alerts) and optimize the customer relationship. Next step: design and develop new services for customized communication with the customers.

BENEFITS AND FEEDBACK

Provide the social landlord's entire staff with new methods to monitor all events of the asset in real time with a view to improving customer service and interacting more easily with service providers: heating, multi-technical services, lift, etc. which are connected to the platform for more than 150,000 housing units.



R2S approach: open software applications providing standardized access to their data so that they can be cross-referenced and enhanced to assist the landlord in monitoring the contractual obligations of its suppliers and in making decisions to optimize the performance of its buildings and improve the quality of services provided to the occupants.



INTRODUCTION OF REMOTE-READ METERS TO LOWER WATER CONSUMPTION

PROBLEM AND PURPOSE

Identify consumption drifts, raise the awareness of occupants to their use of water and quickly initiate corrective actions.

THE SERVICE OR THE SOLUTION

The introduction of remote-read meters in order to remotely monitor individual water consumption and send alerts to the manager in the event of leaks or drifts. A call center therefore contacts the relevant occupant and asks the individual to check his or her systems (dripping, leakage of the toilet flush) in order to schedule a service call if necessary. Secondly, calorimeters and temperature probes have been installed on the same remote-read architecture.

BENEFITS AND FEEDBACK

- Savings on water consumption.
- Monthly receipts issued on the actual index.
- Limitation of water damage, infiltration.

-11% ON INDIVIDUAL CONSUMPTION WITH RESPECT TO THE REFERENCE YEAR

CASE OF 15,000 COLD AND HOT WATER METERS INTRODUCED IN THE HOUSING STOCK OF A LANDLORD FROM A LARGE URBAN CENTRE WITH 12,000 HOUSING UNITS SPREAD ACROSS 230 BUILDINGS.

R2S approach: pooling of the equipment installed to create a host of services above those initially imagined. For example, based on the consumption data, services associated with the detection of fuel poverty and homecare can be implemented without adding new equipment.

RISK PREVENTION: MONITORING OF TECHNICAL EQUIPMENT IN THE COMMON AREAS

PROBLEM AND PURPOSE

Detect equipment malfunctions (CMV unit, lift pump, skydome or garage door) and prevent the associated risks.

THE SERVICE OR THE SOLUTION

Installation of sensors:

- On the CMV units: daily measurement of vacuum pressure
- On the lift pumps: detection of filling / overflow levels
- On the skydomes and garage doors: time delayed monitoring of opening / closing.

Via the remote monitoring of these items, preventive or curative maintenance actions, alerts from service providers for actions to limit the risks of intrusion / vandalism and degradation of the dwellings and common areas (mold and water damage).

BENEFITS AND FEEDBACK

- Occupant comfort and safety: ensure good air quality for the occupants and proper operation of the garage door to prevent intrusions.
- Durability of the asset: savings on repair work by preventing damage related to humidity within the buildings (CMV unit), in the event of bad weather if a skydome remains open or upon overflow of a lift pump.
- Optimization of maintenance contracts: anticipate malfunctions and limit the downtime of equipment.

€8 to 10 FEEDBACK FOR A SOLUTION INTRODUCED ON OVER 600 SANITARY CMV BOXES

PER YEAR AND PER UNIT SAVED ON WORK FOR THE MANAGER (REPAIR OF THE BATHROOM, KITCHEN, ETC.) THROUGH THE INSTALLATION OF SENSORS IN THE CMV UNITS



PREVENTION OF INCIDENTS AND EXTENDED BREAKDOWNS ASSOCIATED WITH THE LIFTS

PROBLEM AND PURPOSE

Reduce repeated or extended breakdowns of the lifts (which is extremely negatively viewed by tenants). Improve their availability rate.

THE SERVICE OR THE SOLUTION

Install smart control boxes in the lifts to improve the prevention of incidents and extended breakdowns. The control box serves to provide real-time monitoring of lift malfunctions and to take action prior to the occurrence of extended breakdowns.

BENEFITS AND FEEDBACK

- Improve the comfort of residents by ensuring better availability of the lifts.

R2S approach: these examples demonstrate the value of reporting and sharing field data for functionality. The interconnection of the various services would serve to increase the efficiency and improve the service provided to users.



CREATION OF A LOCAL COMMUNITY NETWORK

PROBLEM AND PURPOSE

Strengthen social connection and simplify the management of incidents.

THE SERVICE OR THE SOLUTION

Implementation of a digital application at the building level which serves to:

- Create a local network of mutual assistance and exchange of services between residents.
- Disintermediate the relationship between residents and service providers.

Therefore, via the application, residents can report an incident in the building (degradation, lift breakdown, etc.) using a photograph as illustration. An alert is then transmitted to the social landlord and to the service provider which analyses the incident and plans a service call if necessary. Residents are informed of the handling of the incident.

BENEFITS AND FEEDBACK

- Simplification of the reporting of incidents to the right person for the residents.
- Improvement of the landlord / service provider / resident relationship through better communication and monitoring and service calls.
- Strengthening of the social connection within the building by creating a special social network.

A SINGLE NETWORK FOR THE VIDEO INTERCOM SYSTEM AND THE TELEVISION

PROBLEM AND PURPOSE

Multiple types of infrastructure to provide digital services in the building and units: currently, a different network is used for the implementation of a video intercom system and for the collective television antenna.

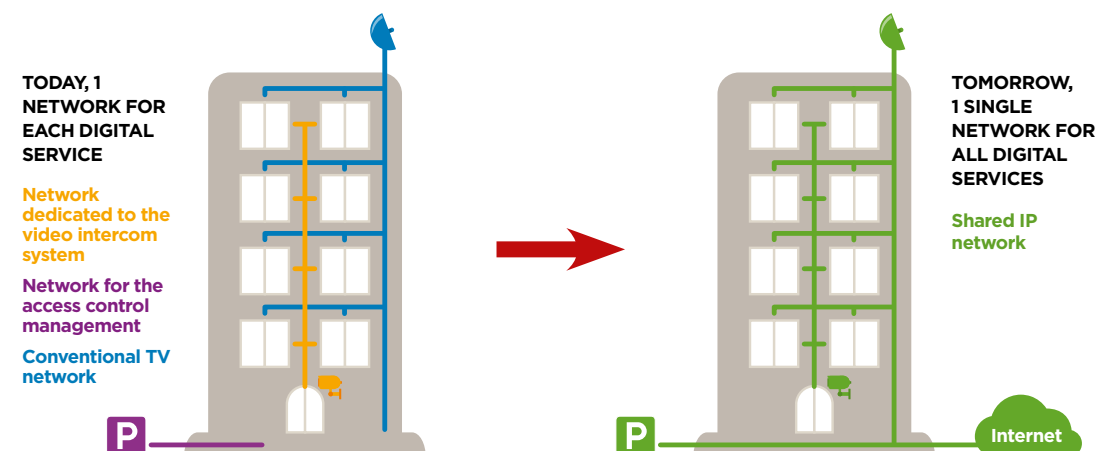
THE SERVICE OR THE SOLUTION

Installation of a single TV/IP DOCSIS column (Data Over Cable Service Interface Specification, a standard which sets out the interface, communication and configuration rules and protocols for data transfer and internet access systems using former coaxial cable television networks) which also provides the video intercom system service. Therefore the network infrastructure is pooled between these two services.

BENEFITS AND FEEDBACK

Savings achieved by eliminating the wiring column of the conventional video intercom system.

R2S approach: the introduction of IP infrastructure as a common basis enables economic efficiency and the provision of infrastructure for the development of new services for the residence (lifts, lighting, boiler room, etc.) or housing units (shutters, lighting, heating, access to social Internet, etc.).



WOULD YOU LIKE TO TAKE THE PLUNGE? A FEW RECOMMENDATIONS

There is a broad range of services to meet the issues and problems of social housing. We offer you an approach to help you make the transition to digital technology in social housing.

MOVE AWAY FROM SILO MANAGEMENT: THE NEED TO ADOPT AN OVERALL APPROACH

This approach must be addressed through cross-cutting and cooperative consideration involving all business areas and the entire chain of social housing stakeholders. This multi-issue, multi-field and multi-player approach must also take into account the existing structure and the context in order to devise a strategy and set goals that are suited to each project. Although the approach is holistic, its implementation will be incremental by firstly giving priority to high added value services and validating the successful achievement of a solution through experiments before large-scale introduction.

THE IMPORTANCE OF A USER-CENTRIC APPROACH

Any innovative project which has an effect on the uses and organizations faces difficulties in relation to how users assimilate the practices or tools. Accordingly, humans must be the central focus of the approach at all project phases: co-creation, information, training, awareness raising, user tests or change management. Combining a user-centric process such as Design Thinking with agile methods to achieve an iterative and collaborative approach are genuine assets for ensuring that your transformation projects are a success.

AND NATURALLY, AN R2S ARCHITECTURE

Within the context of R2S, it is essential to select open and interoperable solutions to enable:

- Pooling of the infrastructure, networks and software or hardware bricks.
- Sharing of data between the various services and stakeholders, thereby offering the ability to cross-reference data in order to create new services.

These conditions promoted by the SBA, especially through the R2S label, the reference framework of connected and communicating housing units, are fundamental for the introduction of attractive, efficient and upgradable services.



QUESTIONS TO ASK YOURSELF

- What data for what use? What about sensors?
- At what frequency do I need to recover data for it to be adapted to the use?
- How can I guarantee data interoperability and at what cost?
- Who will be responsible for governing data: its accuracy, integrity, timeliness, continuity?
- How can I coordinate the implementation of the various technical and technological bricks of the project? Smart integrator?
- Who will be the coordinator for operation and maintenance of the R2S infrastructure and the installed software?
- How can I reclaim the content of the services and data in the event of a change of service provider?

THE SBA PROVIDES SUPPORT TO THE BUILDING SECTOR TO HELP ACCELERATE ITS TRANSFORMATION IN LIGHT OF THE CHANGES RELATED TO THE HUGE INFLUX OF DIGITAL TECHNOLOGY IN SMART BUILDINGS AND THE SMART CITY. IT OFFERS AN OVERALL VISION BY RELYING ON SHARED INFRASTRUCTURE FOR THE PROMOTION OF NEW SERVICES CENTERED ON USAGE PATTERNS, AS GENERATORS OF EFFICIENCY AND BETTER SOCIAL COHESION.

The SBA's actions

MEETINGS

Bring together the sector in a cross-cutting manner

SBA events, for shared experiences and a watch on themes regarding the smart building in the sustainable city.

PUBLICATIONS

Share our vision and our recommendations

Smart Buildings for Sustainable Cities Manifesto, Guide for Ready2Services buildings and regions. e-SBA (bimonthly news).

COMMITTEES

Discussions regarding changes to the building sector in the smart city

"Expert" committees to define a common framework for connected and open buildings.

RELATIONSHIP WITH INSTITUTIONS

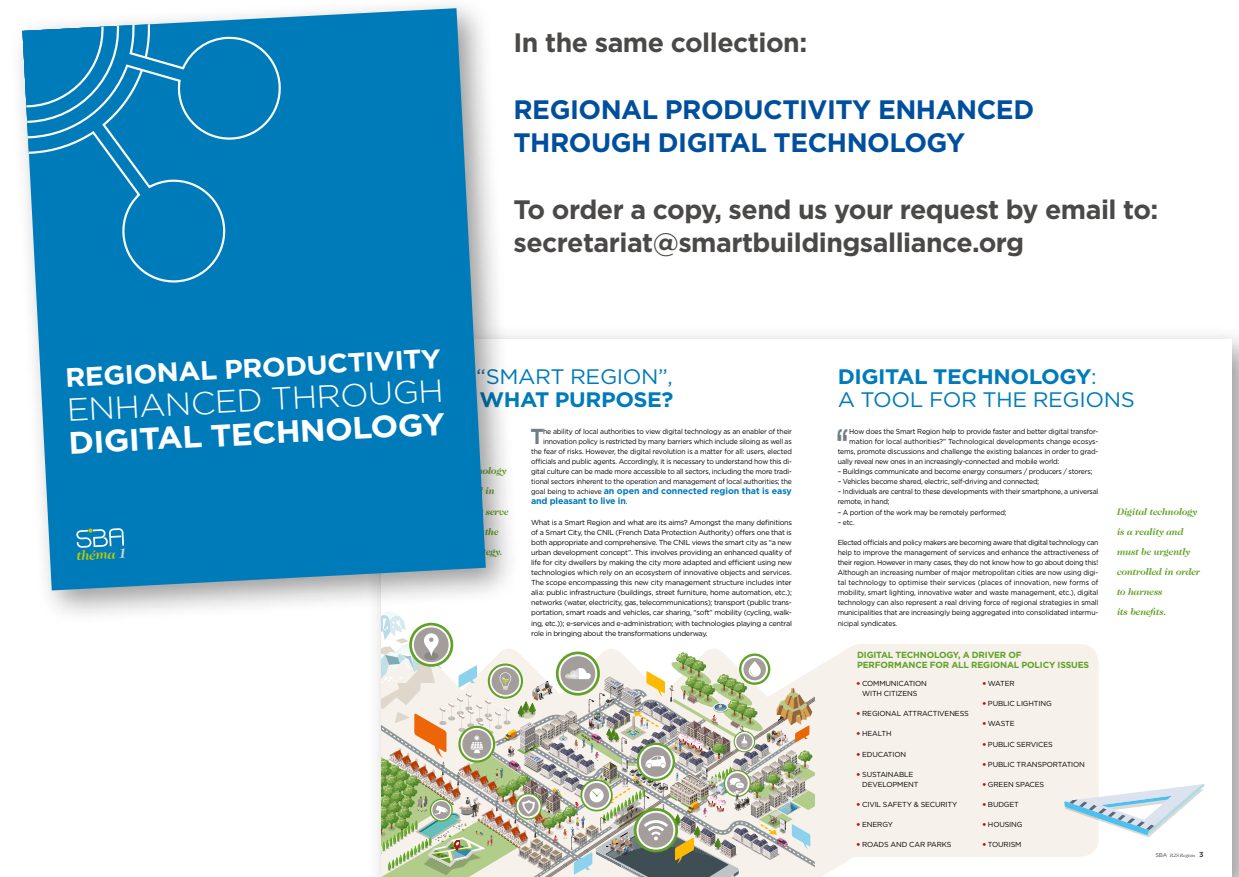
Raising the awareness of public policy makers

Ministries, public institutions, local authorities, professional unions, etc.

INTERNATIONAL COOPERATION

Expanding beyond national borders

Interactions with international organizations.



Become a member of the SBA, alongside Smart Buildings and Smart City leaders and experts in order to:

- Understand the associated challenges and issues
- Help to define and implement the basic frames of reference
- Obtain information and monitor innovations of the sector
- Develop your network and interact with your peers
- Meet with experts from trades connected to your own

THE SMART BUILDINGS ALLIANCE IS MADE FOR YOU, CONTACT US:

+33(0)820 712 720 • CONTACT@SMARTBUILDINGSALLIANCE.ORG

WWW.SMARTBUILDINGSALLIANCE.ORG



Emmanuel François: PUBLICATION DEPARTMENT

Alain Kergoat: PROGRAMME DEPARTMENT

Paul Raad – Christian Rozier: EDITORIAL DEPARTMENT

Dominique Briquet: PROJECT COORDINATION

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FACILITY MAGEMENT ● AIRRIA ● ALCANTE ● ALGECO ● ALIAXIS ● ALLIANZ REAL ESTATE FRANCE ● ALPHA
RLH ● ALTAREA COGEDIM ● ALTECON ● ALTERNET ● AN2V ● ANC TECHS ● APILOG AUTOMATION ● ARC
INFORMATIQUE ● ARCHIMEN ● ARCOM ● ARISTOTE ● ARKHENSPACES ● ARP ASTRANCE ● ARTELIA ● ARXIT
● ASCAUDIT ● ASSOCIATION HQE ● ASSOCIATION FRANCAISE DE L'ECLAIRAGE ● ASSYSTEM ● ATC France ●
AURI ZONE ● AUTOMATIQUE ET INDUSTRIE ● AXIANS ● AXXONE ● AZUR SOFT ● B.tib ● BAALBEK
MANAGEMENT ● BARBANEL ● BCM ENERGY ● BEEBRYTE ● BG INGENIEURS CONSEILS ● BIA CONSEIL
● BIRDZ ● BNP PARIBAS REAL ESTATE ● BORDEAUX METROPOLE ● BOUYGUES CONSTRUCTION ●
BOUYGUES ENERGIES & SERVICES ● BOUYGUES IMMOBILIER ● BOUYGUES TELECOM ENTREPRISES ● CABA
● CAE GROUPE ● CAILLOU VERT CONSEIL ● CAPENERGIES ● CCF ● CCI NICE COTE D'AZUR ● CDU Immobilier
● CERTIVEA ● CIDECO ● CISCO ● CIT RED ● CITYLITY ● CLUSTER HBI ● CONNEK + CONSEIL ● CONSEIL DE
DEVELOPPEMENT METROPOLE DE LYON ● COSTE ARCHITECTURES ● COTHERM ● COVIVIO ● CR SYSTEM ●
CSTB ● CYMBIO ● CYRISEA ● DALKIA ● DALKIA SMART BUILDING ● DASSAULT SYSTEMES ● DATA SOLUCE
● DECAYEUX ● DECELECT ● DEERNS FRANCE ● DELOITTE ● DELTA DORE ● DEMATHIEU BARD ● DIS
INGENIERIE ● DISRUPTIVE TECHNOLOGIES RESEARCH ● DISTECH CONTROLS ● DOVOP Développement ●
E'NERGYS ● ECONOCOM ● EDF - BRANCHE COMMERCE ● EFFICACITY ● EFFIPILOT ● EGIS ● EGF BTP
● EIFFAGE ENERGIE ● ELITHIS ● EMBIX ● EN ACT ARCHITECTURE ● ENERBEE ● ENERGIE IP ● ENERGISME
● ENGIE AXIMA ● ENGIE INEO ● ENLIGHTED ● ENOCEAN ● ENSEMBL' ● ENSI POITIERS ● F2A SYSTEMES ●
FAYAT ● FFDomotique ● FIFTHPLAY ● FORMAPELEC ● GA2B ● GARCIA INGENIERIE ● GA SMART BUILDING
● GCC ● GETEO ● GETRALINE ● GREENFLEX ● GLI - GROUPE EKIUM ● GRAND PARIS HABITAT ● GRDF ●
GROUPE BETOM - IDEAM SOLUTIONS ● GROUPE HBF ● GROUPE OVIANCE ● HABITAT76 ● HAGER ● HAVR
● HENT CONSULTING ● HESTIA INNOV ● HONEYWELL ● HSBC ● HXPERIENCE ● HYDRELIS ● IBM ● ICADE ●
ICONICS ● IDEX ● ILOGS FRANCE ● IMMOBILIERE 3F ● IMPERIHOME ● INGETEL BET ● INNOVATION
PLASTURGIE COMPOSITES ● INSITEO ● INTENT TECHNOLOGIES ● IP2I ● IPORTA ● ISTA ● JOOXTER ● KALIMA
DB ● KARDHAM CONNECT ● KEO FLUIDES ● KEYCLIC ● KLDOM ● KOONTOO ● KORUS ● LD ● L'IMMOBILIERE
IDF ● LE CNAM ● LEGRAND ● LEON GROSSE ● LES COMPAGNONS DU DEVOIR ● LEXCITY ● LITED ● LM
INGENIERIE ● LONMARK France ● LUTRON ELECTRONICS ● LUXENDI ● MBA INGENIERIE ● MCS SOLUTIONS
● MEANWHILE ● MEDIACONSTRUCT ● MEDI@SAT ● MICROSENS ● MIOS ● MONBUILDING ● MOZAIQ ●
NEOBUILD ● NETISSE ● NETSEENERGY ● NEXITY ● NODON ● OCCITALINE ● OGER INTERNATIONAL ● OGGA
● OPENFIELD ● ORANGE ● OVERKIZ ● OYA LIGHT ● OZE ENERGIES ● PARTAGER LA VILLE ● PHILIPS
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IMMO ● PREMIUM CONSEIL ● PRESTANTENNES ● PRESTATERRE ● PRIVA ● PROJET LORIAS ● PROLOGIS ●
PROMOTELEC SERVICES ● PROXISERVE ● QARNOT COMPUTING ● QOS SOLUTION ● QUALICONSULT
● QUALITEL ● QUINTEA ● RABOT DUTILLEUL NACARAT ● RENESAS ● RESOLVING ● REXEL ● ROBEAU ●
S2E2 ● S2I COURANT FAIBLE ● SANTECH ● SAUTER ● SCHNEIDER ELECTRIC ● SAINT-GOBAIN ● SE3M
● SEMTECH ● SENSINOV ● SERCE ● SETEC BATIMENT ● SFEL ● SFR ● SIBCO ● SIEMENS ● SIRLAN ● SISA
FRANCE ● SLAT ● SMARTENON ● SMARTHOME FRANCE ● SMART USE ● SMART HAB ● SNACG ● SNEF
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● SXD ● SYLFEN ● SYPEMI ● SYSELIA ● SYSTECHMAR ● TACTIS ● TECHNAL ● TECHNILOG ● TEVOLYS ●
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● WISEBIM ● WIT ● WSP France ● Wx ● YOUSE ● Z#BRE ● ZEPLUG

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