

Building Solutions



FOCUS™ - FIBRE OPTIC COMMUNICATION UNIFIED SOLUTION

SMART BUILDINGS AUTOMATION SYSTEMS

Contents

FOCUS™ Efficient fibre optic solutions for SMART BUILDINGS



Introduction



FOCUS™



Passive Layer



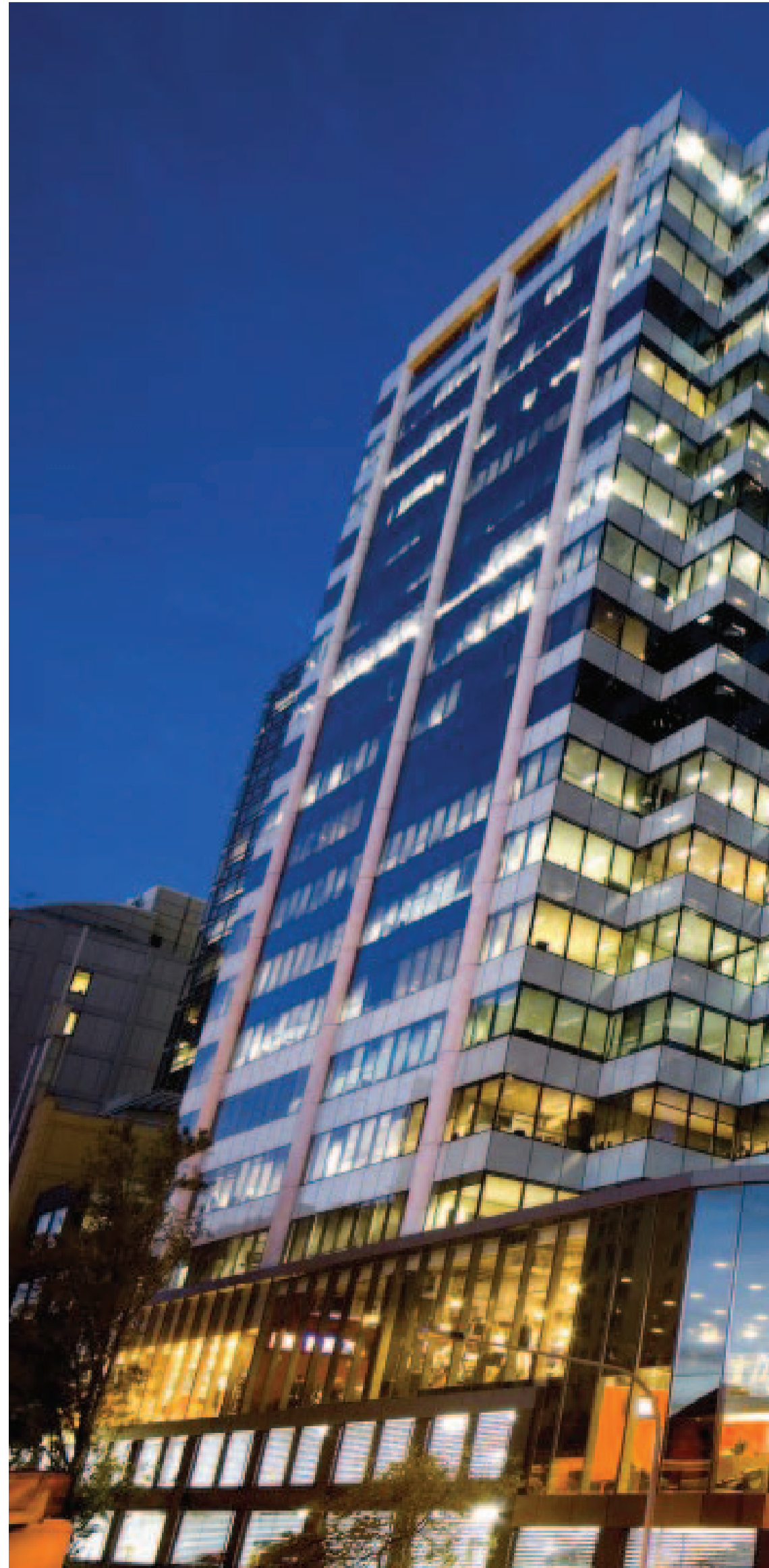
Active Layer



System Layer



Application and
Supervisory
Management Layer



INNOVATIVE TECHNOLOGY ACHIEVING MEASURABLE RESULTS



Introduction

A Complex of buildings, being a high rise or multiple buildings on a campus, is considered as a Mini City. The buildings can vary from Hotels and Leisure Facilities, Offices, Hospitals and Universities to Malls, Stadia, Airports and Industrial Facilities. SMART Buildings are a must and people's expectations are high. Technology, Environment, Life Safety and Security are a prerequisite.

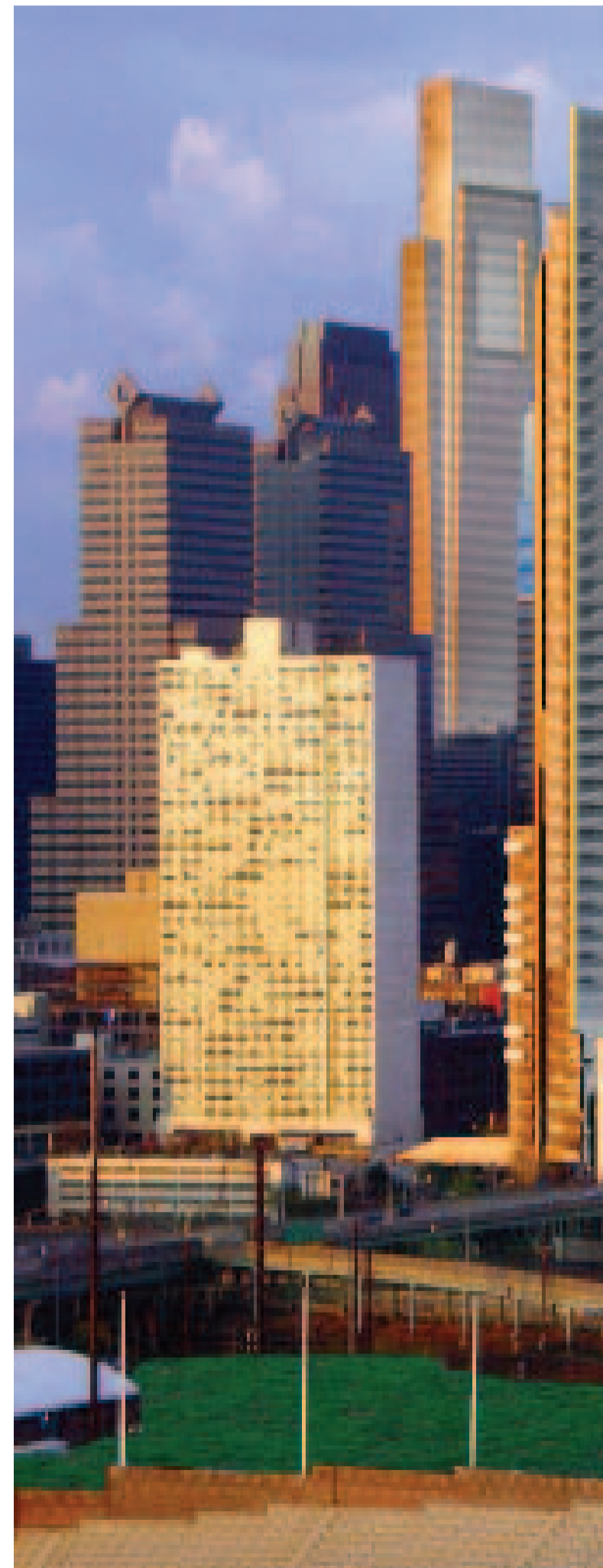
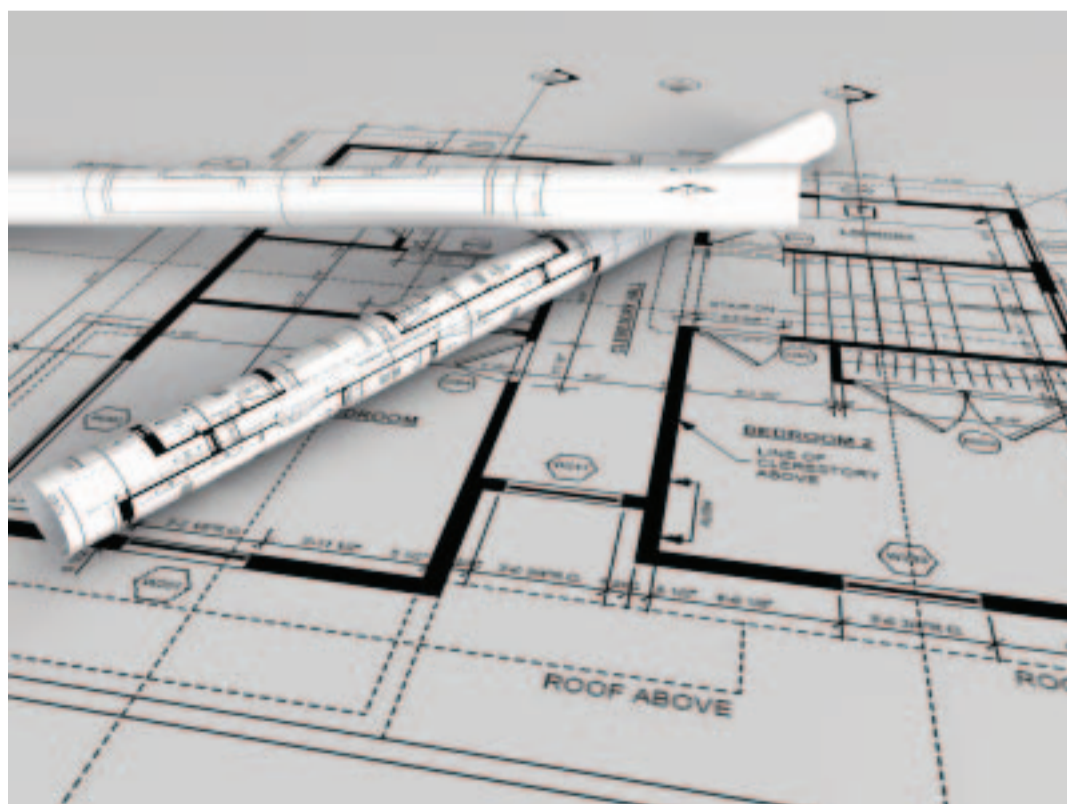
We provide integrated Campus and In-Building solutions based on Fibre Optic Communication Unified Solutions (FOCUS™), catering for various industrial sectors.

We pride ourselves that we work hand in hand with our clients, who effectively we consider as our partners, thus being able to carry out the life cycle of a project from design, implementation, operation and maintenance.

The majority of our personnel are qualified engineers, experienced in both technical and market knowledge and this strong combination guarantees that projects are carried out efficiently by meeting strict deadlines as per client requirements. Furthermore, the rich mix of professionals from our executive and associate portfolio guarantees top notch projects, consultancy, and services.

The FOCUS™ concept was developed to meet today's fast technological demands required in Buildings. SMART Intelligent Buildings are achievable with the help of FOCUS™ methodology.

Customer once - client forever



The question for buildings today isn't whether to implement a network but how to build a network that can sustain present and future data traffic demands. All this, ideally, at a reduced cost and revenue making.



FOCUS™ - Fibre Optic Communication

Real time information systems require high speed data networks to sustain operational efficiencies, and provide a more responsive and agile environment that reduces operational risks - **DO MORE WITH FEWER RESOURCES**



A concept that addresses your needs

The FOCUS™ (Fibre Optic Communication Unified Solutions) concept provides unprecedented benefits that provide IT and facilities managers with maximum network efficiency, immediate control over bandwidth requirements, significant cost savings, quick project turnaround times, and total control over planning and budgeting. Essentially, we guarantee that your network is keeping up with the exact pace of emerging technology.

What is FOCUS™ ?

FOCUS is a framework developed to integrate high speed data network, providing mobility, security and inter-operability of IP convergence devices managed and operated on a single Fibre Optic Communication Unified System. The system exceeds by far today's expectations and sets future standards in terms of data speed, Quality of Service and manageability of the whole building ICT infrastructure.

The 4 Layer Framework approach

- **Passive Layer** is the redundant Fibre Optic Infrastructure, based on FibreJet™ air blown technology provided to present the latest future proof fibre optics technology available on the market ;
- **Active layer** comprises a selected design of Core, Edge and Industrial ethernet switches utilized to sustain high speed data traffic, redundancy and security required in buildings today ;
- **System Layer** is the integration by design of devices adopted to integrate all systems, such as Information Communication and Entertainment (ICE) and Integrated Business Management System (IBMS);
- **Application and Supervisory Management Layer** is the application suite that monitors and manages intelligently the network. The IBMS provides integrated framework for all systems and is a consistent data source for the efficient running of the SMART building.

An integrated approach is the key

The system is made up of a combination of devices based on IP Ethernet, which are seamlessly integrated on a Unified Redundant Fibre Optic infrastructure. All the traffic generated by these devices is easily fulfilled and Quality of Service is safeguarded. The Network Administration Management Suite will monitor the performance and manage the system and ensures that the user experience is not degraded.



Unified Solution

FOCUS™ is your solution

Future Proof Technology

The combination of flexibility and future proof technology not only supports the network requirements of the diverse community of users but can also generate additional revenue for the operators. Many operators have already identified for themselves the value of a well-constructed network infrastructure as an investment in future competitiveness and autonomy.

Passive Layer Benefits

- Meet your bandwidth requirements in minutes
- Future proof concept “ fibre on demand ”
- Increase reliability
- Easy to maintain
- Optimized network security
- Save 70% for first fix and mechanical construction

Active Layer Benefits

- High bandwidth per user or device
- Fully redundant with fallback capability
- No distance limitations
- Energy efficient - no cooling required
- No proprietary protocols or devices
- Scalable Modular Solution

System Layer Benefits

- Single Infrastructure serving all systems
- Fully integrated system
- Less resources required to maintain
- Risk reduction with system modifications
- Improve compliance
- Scalable for new technologies

Application and Management Layer Benefits

- Full network management without any limitations
- One management integrated platform
- Real time data reporting
- Easy-to-use web based user interface

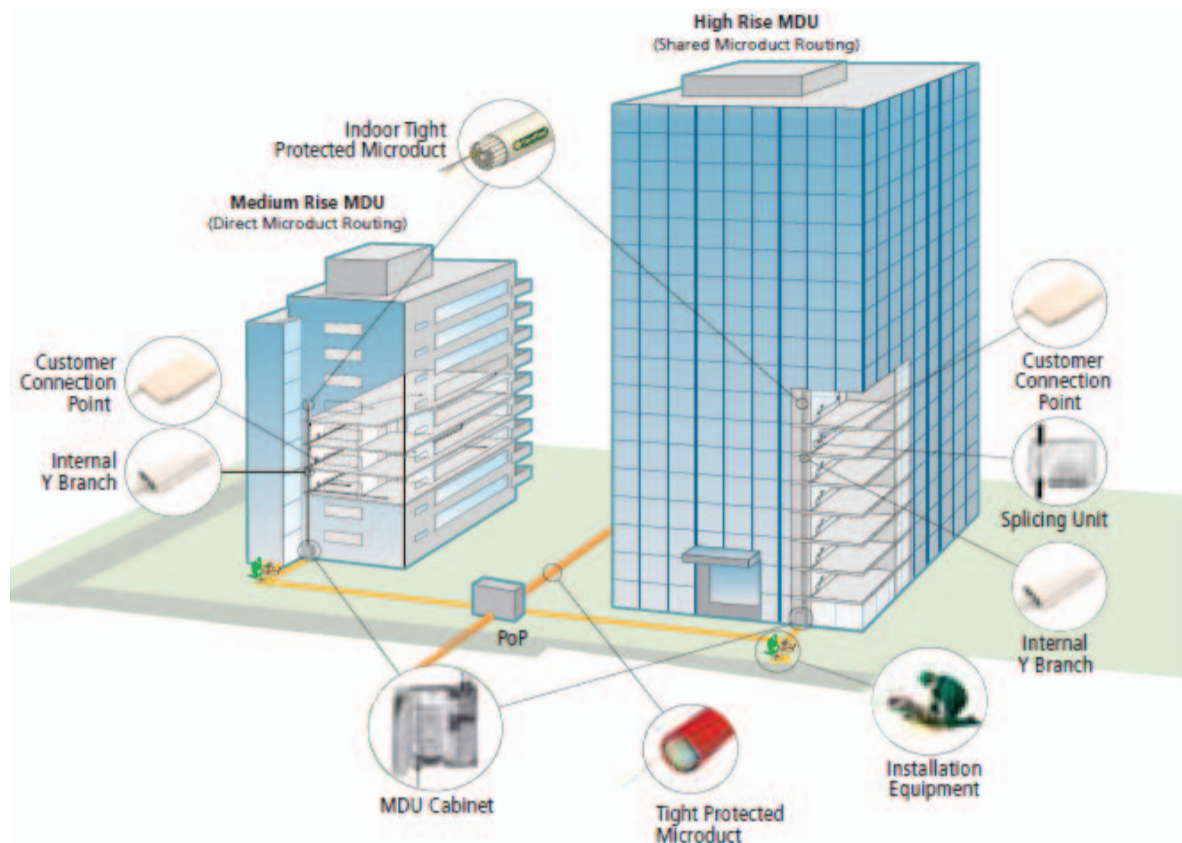
Overall Benefits

- Cost effective solution-guaranteed short RoI
- Reduce CapEx and OpEx
- Open system architecture
- Ease of upgradability
- Meets stringent building security rules
- Positive impact on LEED credits
- Revenue Generation by selling of auxiliary services



FOCUS™ - Passive Layer

Innovative Fibre Solution that empowers your building and meets present and future technological achievements



High Rise Buildings FibreJet™ Solutions

Innovative Fibre Solution

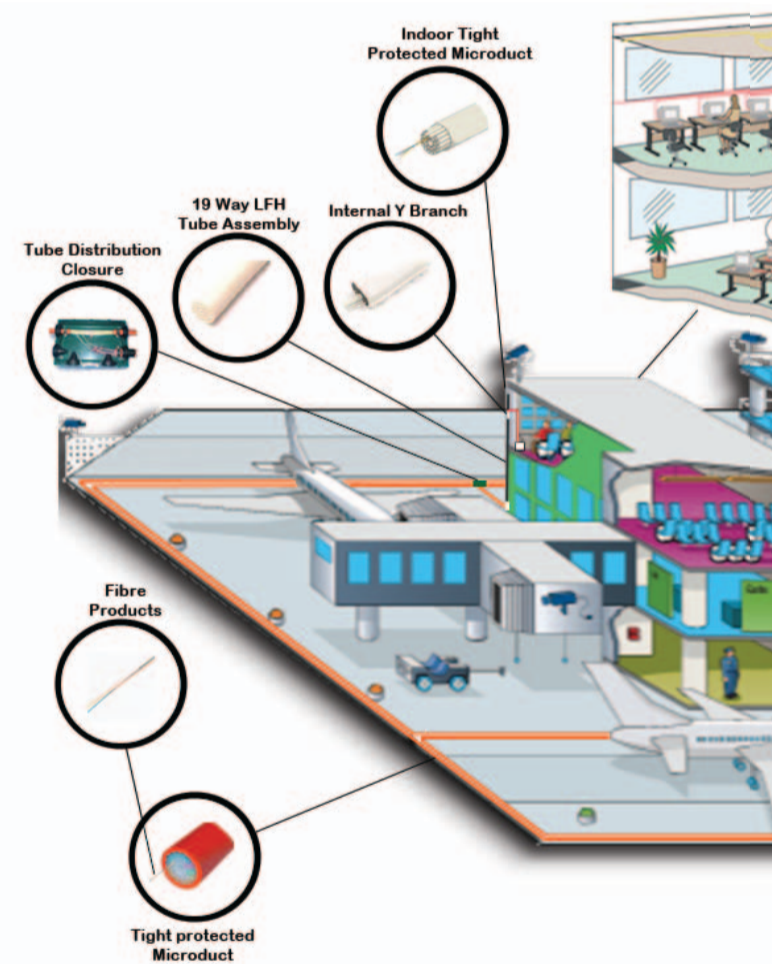
FibreJet™ is the most technological proven air-blown fibre passive infrastructure based on small, light-weight, extremely robust microducts. The system empowers the ICT network with a Fibre Optic infrastructure that is constantly renewable, recyclable and sustainable with no end of cycle .

FibreJet™ is an integral part of FTTX solutions. The strain-free method of installing fibre optic cables and fibre units in microducts relies on the flow of compressed air passing over the entire length of the duct to create a fluid drag, which gently carries the fibre down the microduct. In addition, a set of rollers or a caterpillar drive typically pushes the fibre optic product into the microduct.

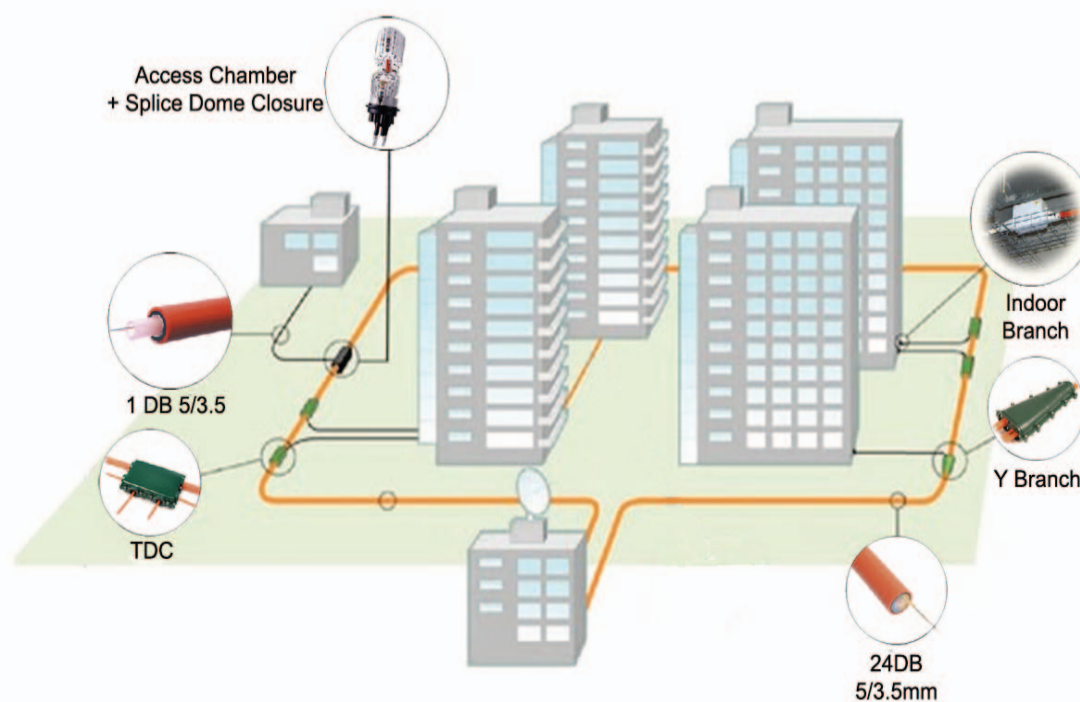
FibreJet™ against traditional Fibre and Copper Infrastructure

The advantages of FibreJet™ over traditional copper structured cabling system (SCS) and fibre optic infrastructure are overwhelming. In a modern building environment, the shortcomings of the commonly used traditional fibre optics as backbone and structured cabling network become apparent. The use of copper cable for horizontal wiring leads to a number of disadvantages, including, but not limited to, the following :

- copper wiring is limited to 100m in length, thus it cannot cover the distances of modern building architecture within one building level
- traditional fibre optics require additional installation time and material which include a considerable extra cost and disadvantages when compared to FibreJet™

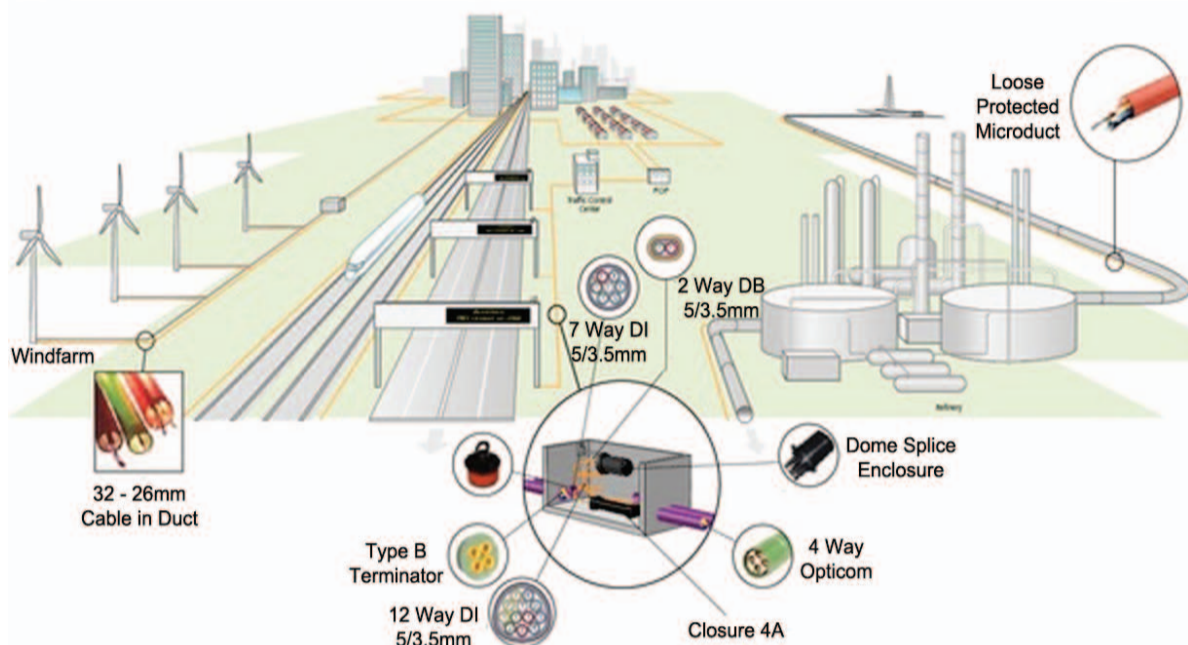


Airport FibreJet™ Solutions



Campus Buildings FibreJet™ Solutions

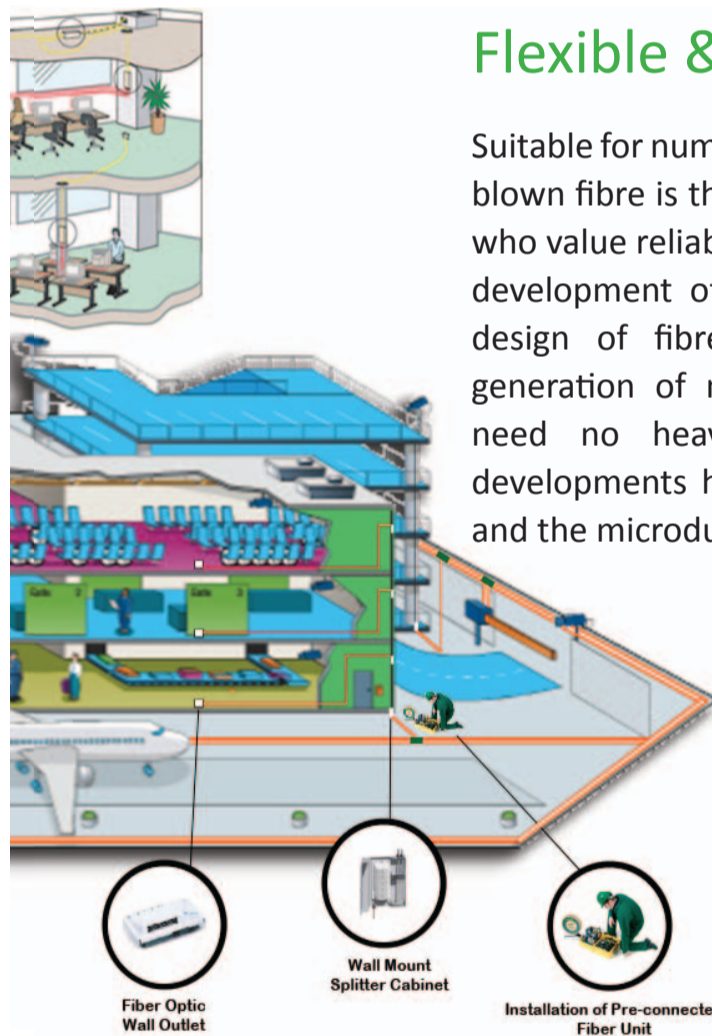
Technology is our passion Innovation is our tradition



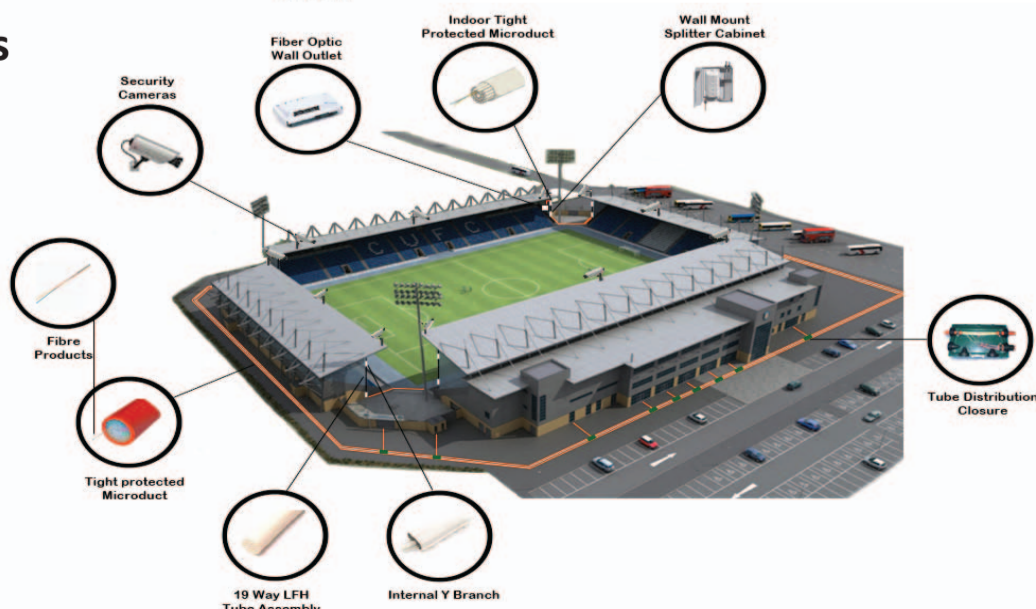
Industrial FibreJet™ Solutions

Flexible & Cost Effective

Suitable for numerous applications, including Buildings, air blown fibre is the preferred installation method for those who value reliability, cost-effectiveness and flexibility. The development of air blown fibre has revolutionized the design of fibre optic products, resulting in a new generation of minicables that take up less room and need no heavy reinforcement. In addition, these developments have reduced the costs of fibre products and the microducts into which they are installed.



Jet™ Solutions



Stadium FibreJet™ Solutions

Technological Benefits

- Scale your network immediately
- Control network capacity
- Meet your bandwidth requirements in minutes
- Future proof concept "fibre on demand"
- Increase reliability due to splice free architecture
- Decrease attenuation
- Less down time
- Easy to maintain
- No need to forecast future technologies
- Optimized network security

Construction Benefits

- Blow fibre even in hard-to-reach places
- Install without any disruption to your facility
- Save 70% for first fix and mechanical construction
- Takes less infrastructure space
- Allows immediate upgrade. No dark fibre
- Reduce time in project planning
- Reduce time in project implementation
- Limited use of electrical closets
- No intermediate distribution frames are required
- Metal free and Low Fire Hazard duct construction

Cost Benefits

- Reduce CapEx and oPex
- Negligible power consumption
- Save initial investment of fibre
- Reduce cost on design and implementation

Environmental Benefits

- No air cooling units due to distributed architecture
- Renewable architecture
- Environmentally clean
- Energy saving
- Positive impact on LEED Credits

Efficient and flexible active ethernet open system architecture that meets future demands

Reliable active networking architecture for buildings

The demands put on information infrastructures are increasing, as are added financial pressures. Therefore, long-term economic solutions with higher scalability become ever more important for building operators. Choosing the right network architecture is the essential basis for a long-term competitive IT infrastructure with operational efficiency.

The use of Micro Switches permits an extension of the fibre optic backbone all the way to the tertiary level of containment (cable ducts, sub-floor boxes as well as in-wall, on-wall and desktop installations).

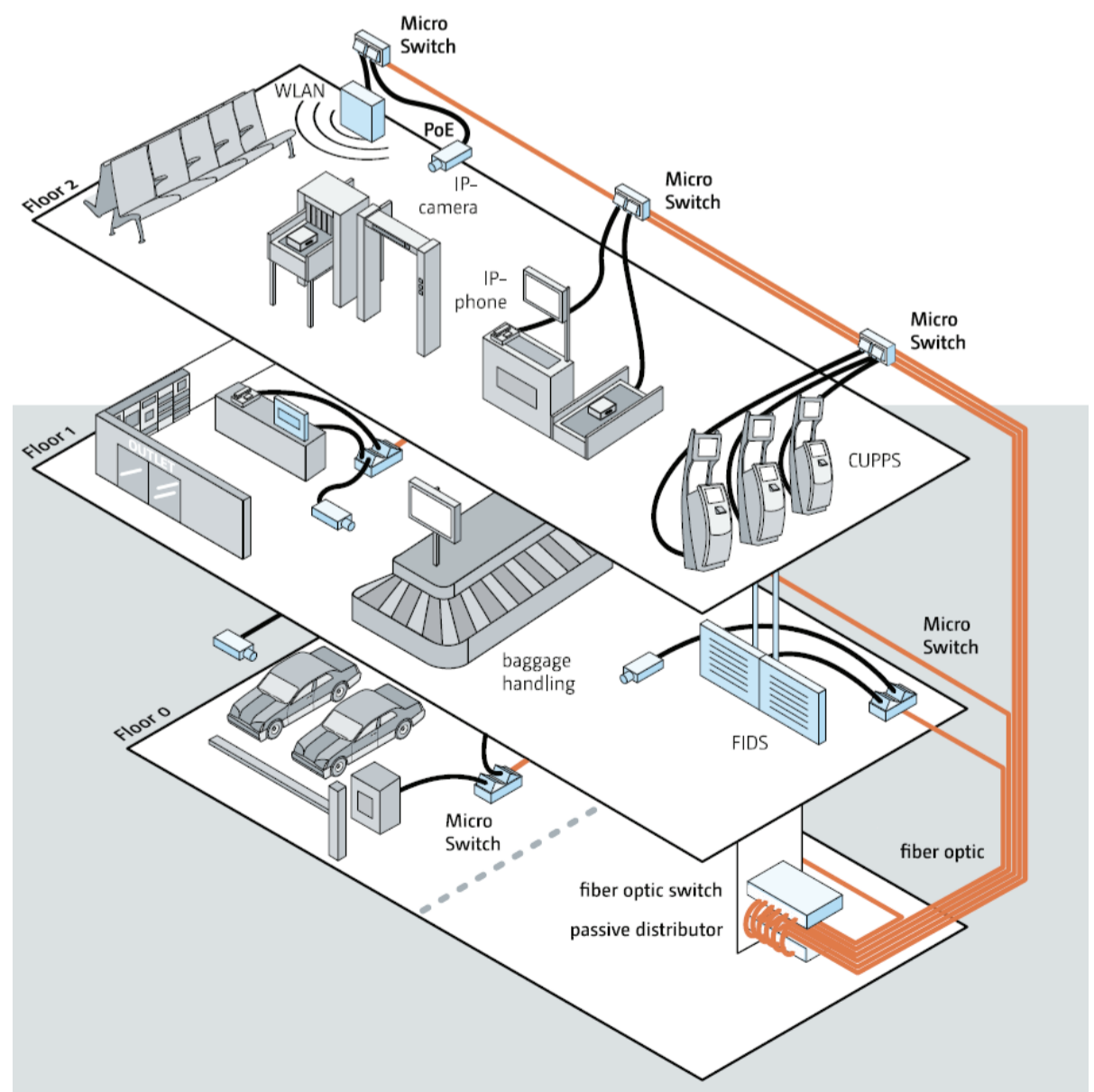
FibreJet™ easily bridges the long distances of large buildings with horizontal fibre optic wiring, whilst saving valuable space, wiring closets, cable trunks and ensuring flexibility such as cabling length limitations and delivered bandwidth, thus reducing overall cost for installation, operation, network expansion and future maintenance.

Achieving planning reliability and reducing follow-on costs

The Fibre To The Office (FTTO) concept offers the best of two worlds by using the technological advantages of fibre optics for the floor wiring in a building, e.g. hardly any length restrictions, interference resistance, future-proofing and long-term reliability. But in contrast to pure fibre optic concepts, FTTO uses the flexibility of twisted pair wiring and brings it via the state-of-the-art concept of the Micro Switch close to the end user. A future change in technology would necessitate only the easy exchange of components to be modernized while the fibre optic wiring itself would remain in its entirety. Thus, the FTTO concept combines the investment protection of fibre optic cabling with the ease of use of twisted pair wiring.

Fibre optic infrastructure with the flexibility of Power-over-Ethernet (PoE)

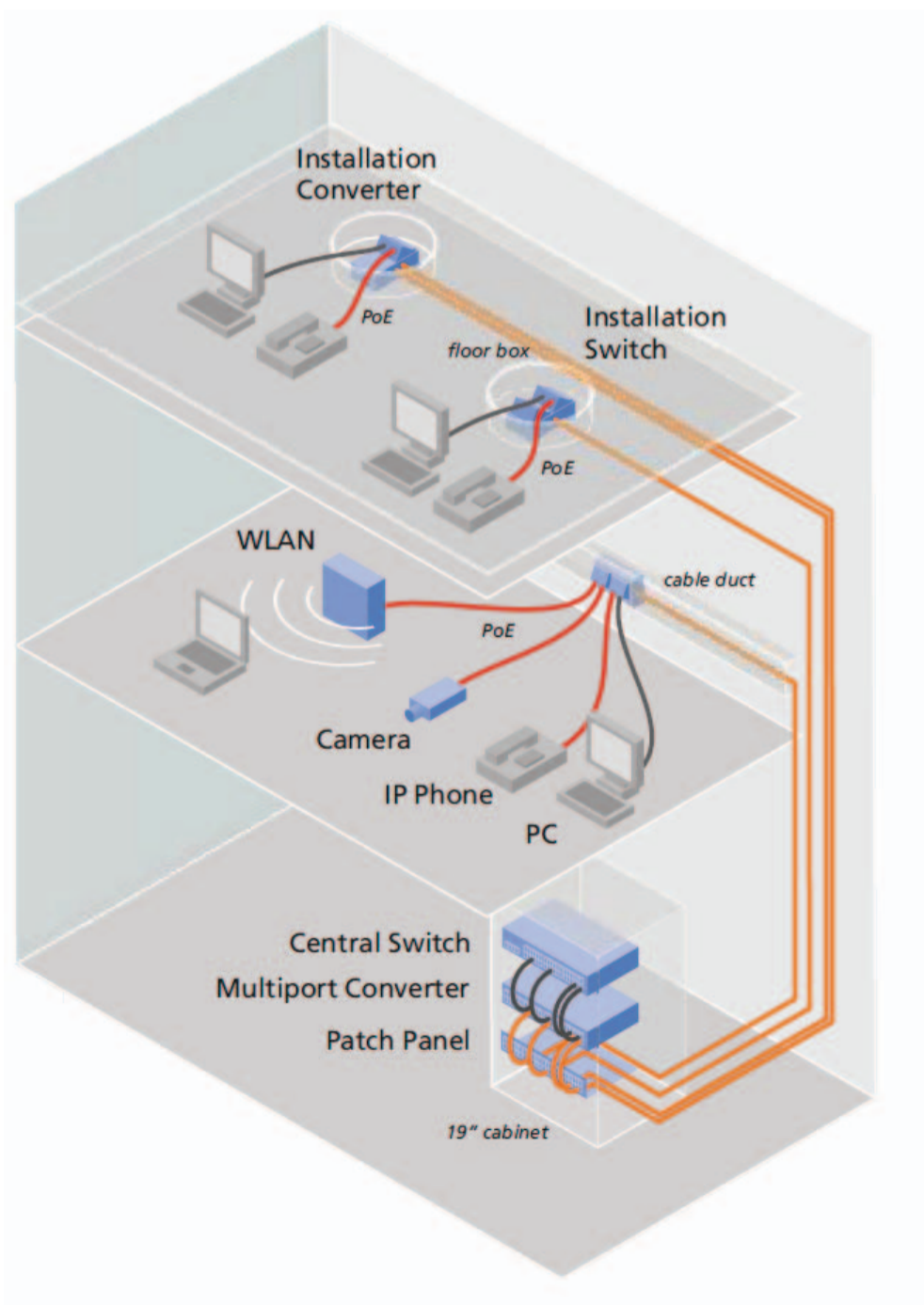
The connecting element of the FTTO concept is the intelligent engineering of the Micro Switches. By terminating the fibre optics into copper ports, the application of PoE (Power-over-Ethernet) for use with some IP based systems is possible at any time. Flexibility provided by a pure Fibre To The Desk solution (FTTD) cannot be provided by FTTO.



Obsessed by the art of technology

ICT solution that reduces spending for cooling and energy

The intelligent power management of Micro Switches guarantees optimal operation of the connected devices and reduces spending for energy and cooling. By avoiding the high energy losses of long copper wires, the overall energy balance of the FTTO concept is much more positive, which results in significant energy cost cutings. Additionally, the natural resources are preserved due to less material, such as limited and expensive copper, being required.



Industrial Ethernet

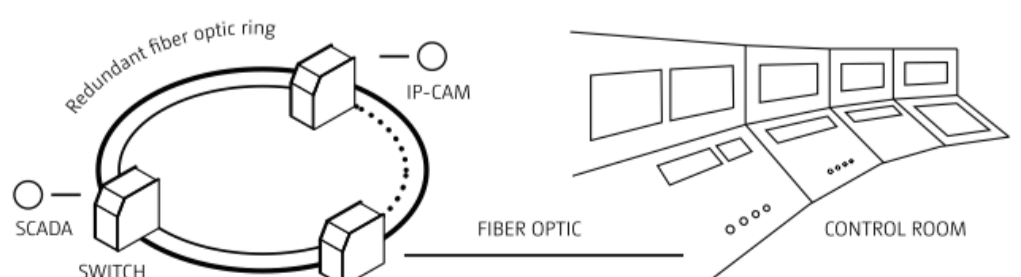
Monitor, control, capture. Reliable data transmission as the foundation for tomorrow's economic decisions

The Industrial Ethernet solution helps building managers keep operational costs at balance while ensuring excellent service. More technological solutions all over the building currently control and consolidate tens of thousands of data daily. Particularly systems in rough environments like outdoor surveillance, BMS, HVAC controllers, life safety systems and security for passengers have high technical stability requirements. Also, for facility management, reliable supervisory and data acquisition are essential to ensure maximum availability of systems.

Industrial Ethernet solutions offer maximum stability for rough environments. The excellent temperature resistance which spans between -20°C to 70°C makes it ideal for the interconnection of building infrastructures in harsh environments, such as IP surveillance outdoor areas, BMS, Perimeter Control and remote locations.

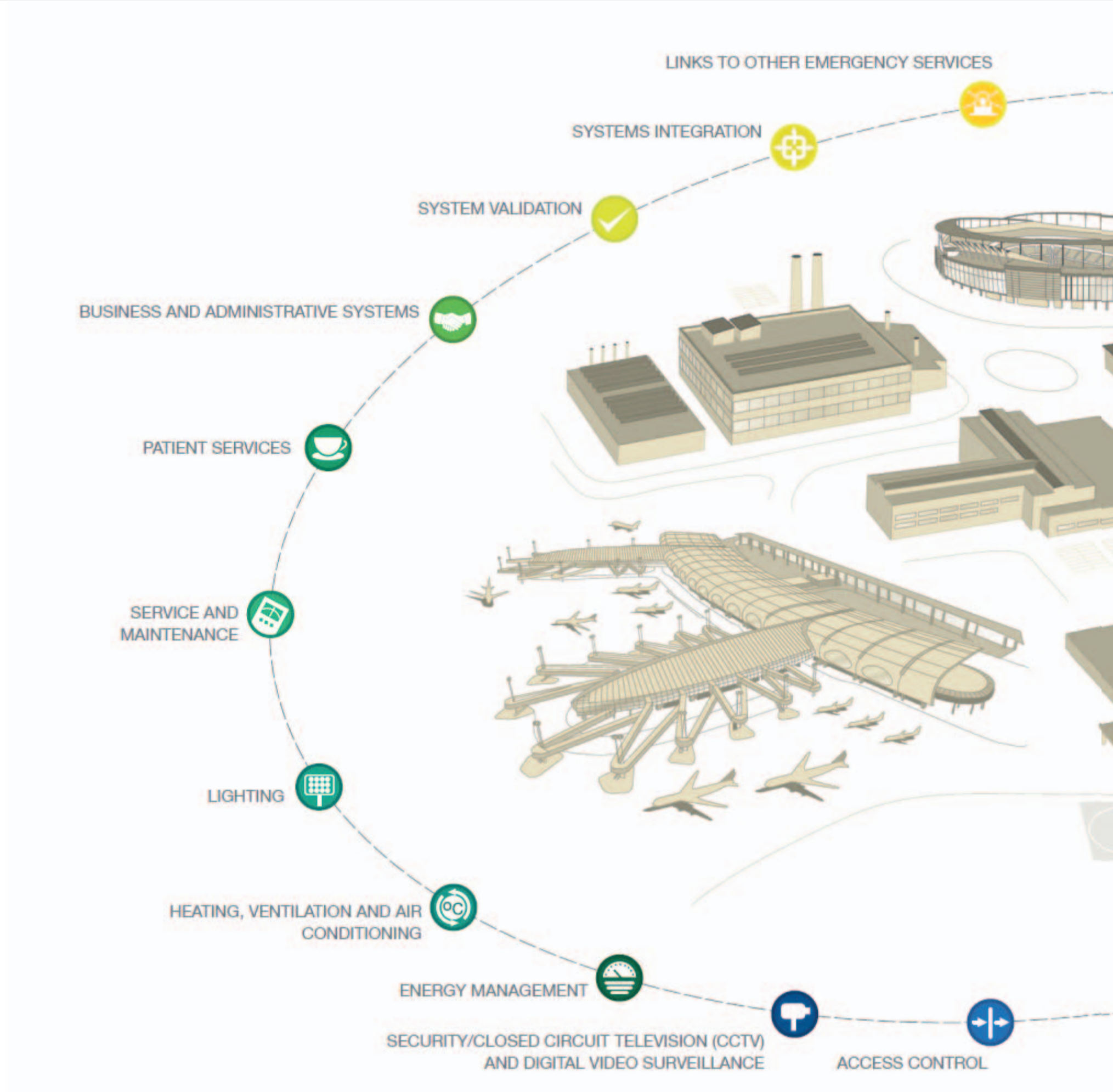
Continuous flow of information

The availability of real time data of critical facility infrastructures via SCADA systems is at the core of every building operation. A continuous flow of data must be ensured for security and safety, service quality and economic viability. The Industrial Ethernet solution offers the necessary bandwidth and resiliency to transmit reliably the continually increasing volumes of data, both for present and future requirements.



FOCUS™ - System Layer

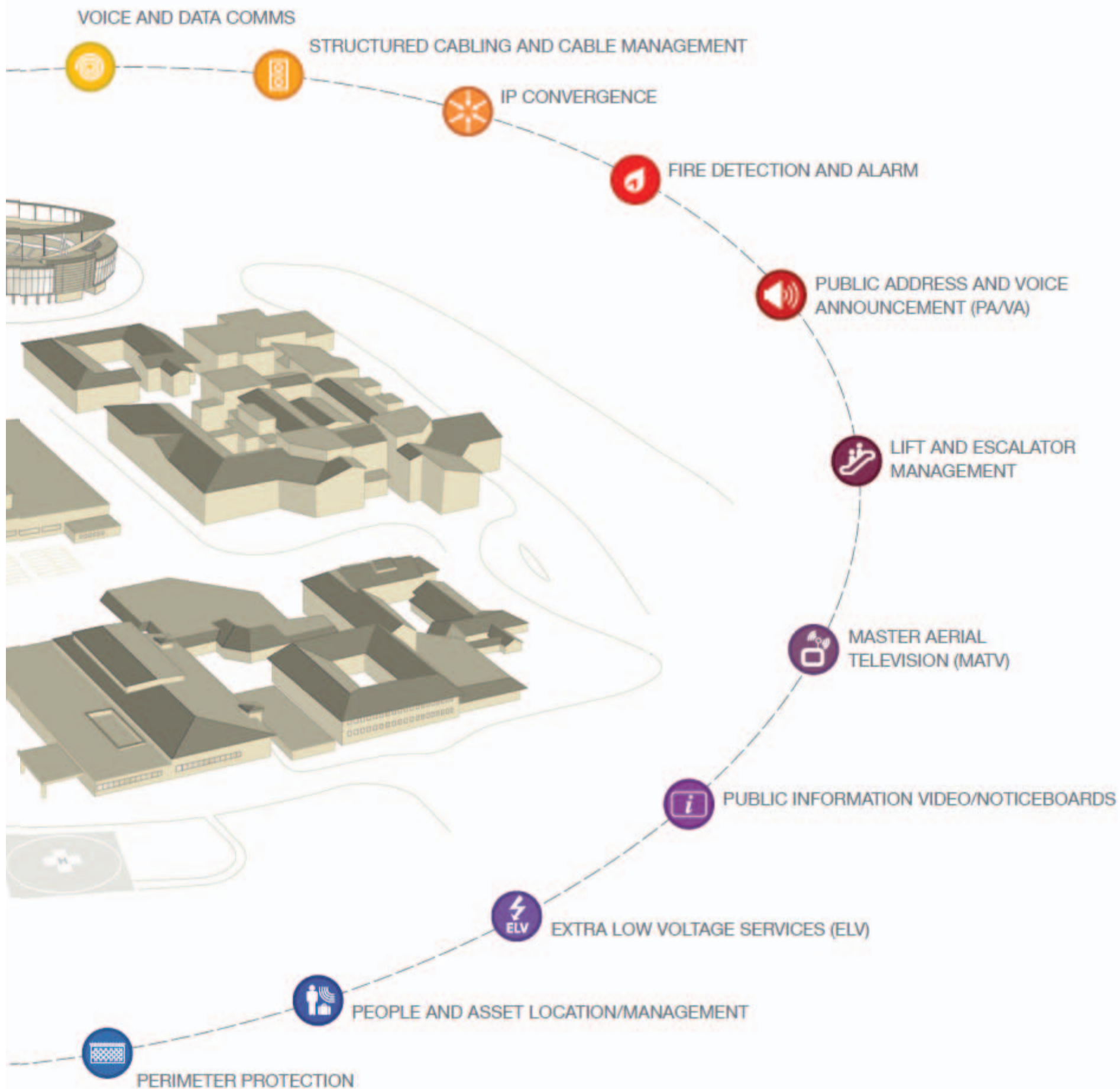
Integrated system technology delivers coherent and timely information exchange for optimal workflow processes and building management



The FOCUS™ concept can be applied to any development, be it a Hospital, Airport, University, Hotel, or Shopping Mall. We develop and deliver innovative solutions to the specific development that cater for current and future needs.

Our FOCUS™ technology delivers a big picture view of the entire network facility and improves functionality and Interoperability, while reducing operating costs and generates new opportunities for revenue making.

Innovation is the future














Our proven IP knowledge and experience enable us to manage the implementation of converged solutions while **VisionStream™**, **FiberGuard™**, **NMP Platform™** and **Enterprise Buildings Integrator™** ensure that data is handled in a consistent way.

It utilises standard technology and can be easily integrated with third party systems and processes.

FOCUS™ - Integrated Systems

An Integrated approach is the key

Communications	 <h3>Control rooms & System Integration</h3> <ul style="list-style-type: none"> • Faster, more effective issue management • Improved management information • Enables inter-operability with other systems • Central point of emergency and disaster management • Provides a single interface between all systems and allows display of data in logical work groups 	Security and Life Safety	 <h3>Fire detection, alarm, public address and voice alarm announcement</h3> <ul style="list-style-type: none"> • State-of-the-art detection technologies with integrated PA/VA ensures safer facilities • Minimise unwanted alarms • Emergency evacuation management • Electronic mustering • Faster, more effective safety management
	 <h3>Data comms and cable management</h3> <ul style="list-style-type: none"> • Fibre Optic Communications Unified System • Seamless network connectivity without any issues • Internal and external WiFi capabilities facilitate access to data from any position 		 <h3>Perimeter Protection and millimetre wave radar</h3> <ul style="list-style-type: none"> • Effective first line of defence over any distance • Early warning of potential ground-based threat • Surface area monitoring and alarming • Can position cameras to look at the threat source
	 <h3>Cyber Security</h3> <ul style="list-style-type: none"> • Ensures against growing threat from hackers and cyber intrusion • Evaluates vulnerability and risk recommending changes as appropriate • Best-practice design in line with customer needs • On-going management of the environment 		 <h3>Security cameras</h3> <ul style="list-style-type: none"> • Identifies security breaches and false alarms • Infra-red cameras ensure peripheral areas are covered, especially during hours of darkness • Can be targeted to threat sources detected by the MM Wave Radar System • Event-driven video recording and retrieval • Powerful search capabilities • Empowers security staff
	 <h3>IP Convergence</h3> <ul style="list-style-type: none"> • Dual redundant backbones • Common IP communication protocols • Fit-for-purpose bandwidth and network speed • Seamless communication • Drives revenue generating opportunities • Simplifies your IT structure and staffing/training needs 		 <h3>Access Control</h3> <ul style="list-style-type: none"> • Authenticate ID of employees, contractors and visitors alike • Timely management of access privileges – places and equipment • On-line electronic muster stations improve safety • Reception management • Streamlines process time
	 <h3>Links to External Authorities</h3> <ul style="list-style-type: none"> • Links to external authorities eg. Police HQ, fire service and local authority 		 <h3>Biometrics</h3> <ul style="list-style-type: none"> • Advanced 3D face recognition • Iris recognition • Fingerprint verification • Hand geometry
	 <h3>MATV / IPTV</h3> <ul style="list-style-type: none"> • Master aerial distribution system • Single access point for venue-wide air-based communication – terrestrial and satellite • IPTV and Video on Demand (VOD) 		

The power of integration

Building Management and Environment Control



Heating, Ventilation and Air Conditioning (HVAC)

- Optimum control of environmental conditions (temperature, humidity) at all times of the day
- Efficient operation of the plant (boilers, chillers, pumps, batteries etc.)
- Automated notification of system conditions
- Assists with identification of problem areas
- Certified emergency smoke control solutions



Fixed electrical ground power and Runway lighting power supplies

- Improved energy utilisation and automated billing
- Reduced environmental impact



Energy Management

- Identify where energy is consumed and apportion costs accordingly
- Manage usage to targets and improve consumption year-on-year
- Bespoke energy management solutions
- Keystone of sustainability program
- Remote monitoring
- Automatic billing



Lift and Escalator Management

- Swift entry/egress
- Crowd control
- Integrates with digital CCTV/video surveillance



Lighting

- Automated monitoring and control of lighting – appropriate to prevailing conditions
- Scheduled operation (day, night, at rest)
- Linkage with other systems such as access control, intruder, fire and HVAC ensures correct lighting under all circumstances



Large Format Video

- Public information screens
- Source, install, commission and service
- Supports emergency communication

Applications



Automated Mustering

- Automatically tracks who is in the facility
- Real time location
- Locates lone workers in a hazardous work place
- Directs first responders to exact location



Time Attendance Monitoring

- Accommodates flexible shift patterns
- Electronic messaging
- Tighter control of payroll for employees and contractors



Business Systems

- SAP /Peoplesoft certified partner: automated linkage with access control – access rights restricted to current staff; new hire permissions given with minimal delay
- Information systems
- Finance and supply chain



Cardholder Management

- Manage and access cardholder functions for employees, contractors and visitors alike
- Photo ID authenticates identification and creates ID badges



People and Asset Location and Management

- Instantly locate people and equipment
- Improve productivity of staff and assets across your enterprise
- Reduce theft, loss and hoarding
- Reduce capital outlay



Reception Management

- Professional first impression
- Integration with access control
- Creates records for frequent, non-card holding visitors – improving visitor management



Patient Services

- Patient monitoring
- Nurse call
- Access to bedside entertainment services eg. telephone, TV, internet, games
- Ordering food and beverages

Application and Supervisory Management

Buildings are complex environments with unique challenges that require robust integration mechanism to implement effective monitoring, administration and security of the building. Productive strategies and problem rectification across all parts of building operations are vital.

Building infrastructure monitoring platform

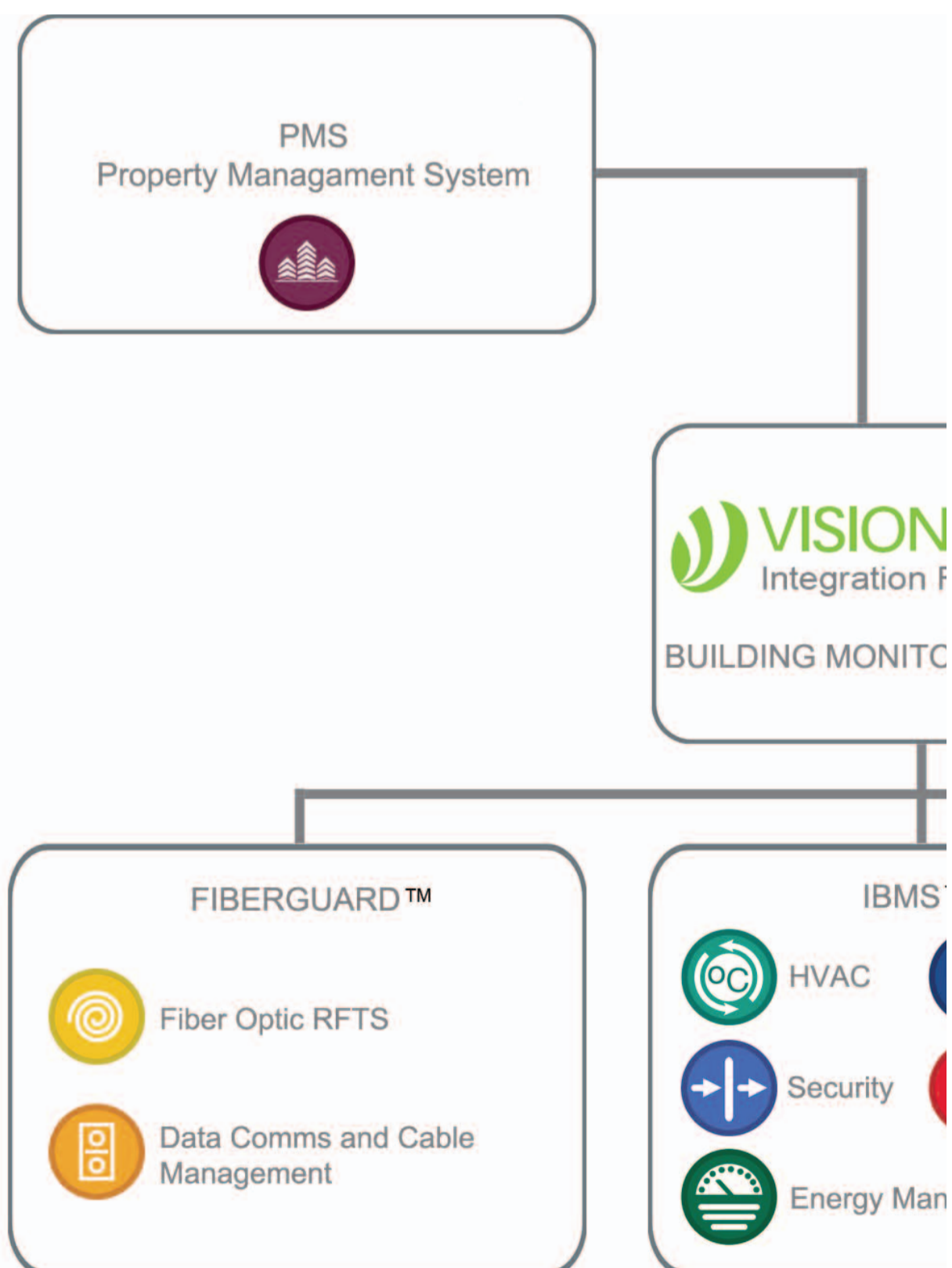
Protecting your investment is vital – whether you are designing a brand new building facility or simply extending or enhancing an existing one. Integrating building management systems with building operations will help you create a smart, safe, secure, comfortable and energy efficient environment. It is not only flexible enough to cope with the constantly changing requirements of the building, but it also improves operational efficiency. It will also maximize the utilization of your assets, improve your ROI and reduce the operating cost of your facility, thereby enhancing your ability to scale up to meet the ever-changing needs of new users.

The Solution

VisionStream™ is a geospatial information integration framework which integrates seamlessly FiberGuard™, Network Management Platform (NMP™) and the Intelligent Building Management System (IBMS™) on a single GIS IT web based system. **VisionStream™** empowers ICT Managers, Facilities Management, Security Services and Operation Management with real time information gathered from all applications. All network assets are geographically referenced, allowing the user to monitor trend analysis, alerts, and alarms on a map, thus providing an effective means to rapid response.

FiberGuard™ is an application that monitors constantly the fibre optic passive infrastructure. The system monitors automatically and simultaneously the health of fibre optic infrastructure utilizing Remote Fibre Test System (RFTS) technology. **FiberGuard™** provides real time information on the status of the infrastructure at any given time. It enables the networks operations manager to ensure proactively reliability, quality of service and reduces the time for the necessary repairs.

Network Management Platform™ (NMP™) is an application used to monitor the ICT Active infrastructure health status and configures the network components. The system provides an easy-to-use graphical interface and several intelligent functions which support the administrator in his daily work. Real time events and alarms are recorded and processed into workflow for action to be taken by the ICT and Facilities Management team.



The key approach is to convey real time data to the right people at the right time in order for them to make informed and optimized decisions. This can be only accomplished by having an integrated platform.

Intelligent Building Management System (IBMS™) is an easy-to-use, intelligent single system that integrates your existing (and future) building management, life safety, security, business and communication systems to provide a highly efficient and consistent data source for the efficient running of the building. **IBMS™** contributes to LEED credits.

In conclusion, **VisionStream™** is a powerful geospatial integration framework which does not only integrate **FiberGuard™**, **NMP™** and **IBMS™** but other building applications where location management is required.

Operational Benefits

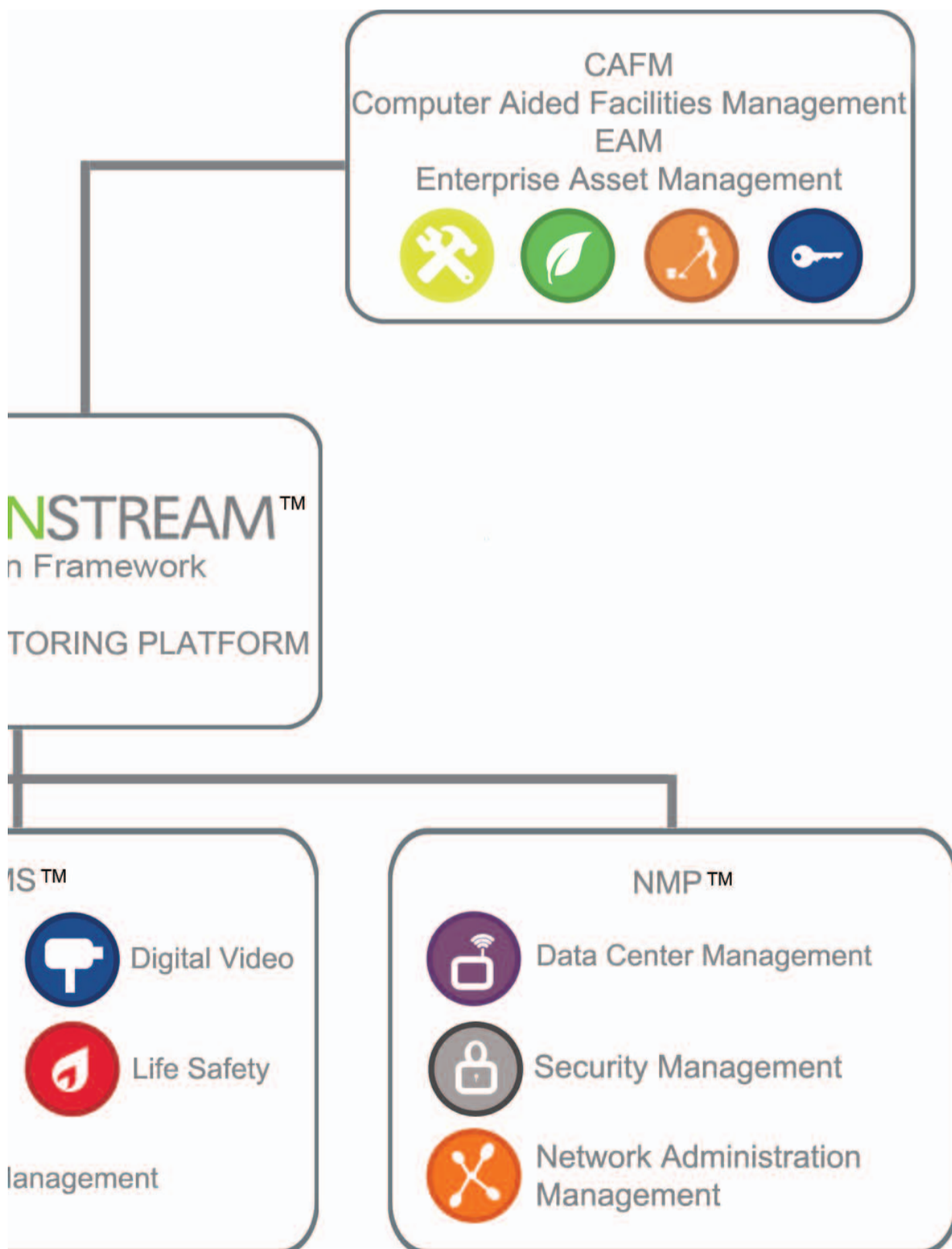
- Improved planning and better resource allocation
- Effective handling of incident management
- Improved monitoring and management of changes to building procedures and maintenance programmes
- Enhanced service delivery
- Reduced risk

Economic Benefits

- Improved productivity of resource availability and deployment
- Clear understanding and control over energy consumption
- Implementation of automatic billing system by transaction, based on measured consumption and utilization of assets
- Cost control and improved cash generation
- Higher return on investment

Technical Benefits

- Risk reduction with system modification and the introduction of new technology
- New measurement and management processes can be easily developed and deployed
- Improved Compliance



Why choose Us ?

We provide an unparalleled level of customized solutions, combined with exceptional people and clever technology. Our unique approach to providing a high-level design and integration is the secret to our on-going success. We'd love you to become part of it.



We Are Passionate about quality

Our high level of expertise combined with a commitment to quality has enabled us to establish strong relationships with a diverse range of clients including public sector organizations, large enterprises, SME's and charities. We have a proven track record with our existing clients and continue to grow our business while still retaining the personal attention to details you deserve.

We value your project design

Our inventive skilled approach to project design means you can be secure in the knowledge that your building will operate effectively and efficiently over its life cycle. Our designs have clearly defined migration paths and are truly open system architecture designs, so you are not tied to a single proprietary provider or solution. By integrating our FOCUS IP solutions knowledge, we are able to ensure that functionality is improved and cost is reduced.

Our priority is to deliver

We bring proven expertise to project delivery and integration, with unmatched experience across a wide range of solutions. We can guarantee that your project runs to time and budget. Being able to coordinate with partners to 'stage' the infrastructure and building systems off-site onto a live working network environment ensures that we minimize integration issues on-site. Our ability to call on our engineering resources means that we can accelerate project delivery.

Service is our pride

Remote capabilities and technical service provided by our group of engineers empowers the client to reduce - the possibility of infrastructure failure.

System preventive maintenance and onsite service is provided by our local experienced service engineers. We protect the value of your system, which ensures efficient, uninterrupted performance over the life cycle of the building – allows you to focus on your core business.





SIMPLIFYING TECHNOLOGY

Suite 4, Skyway Offices, Block A
177, Marina Street Pieta,
PTA 9042, Malta, Europe
Tel : +356 21 250883
Fax: +356 21 250884

www.focusystem.eu

