The future is exciting.

Taking the complexity out of surveillance

Ready?

Vodafone Smart Camera
The Vodafone Smart Camera provides a full end-to-end solution for your surveillance and monitoring needs — no matter how challenging and remote the environment may be.

Visibility of remote assets, without the need for infrastructure
Traditional CCTV cameras give you the ability to monitor vital assets, but they’re expensive to install, depend on cabling and are fixed in position. The Vodafone Smart Camera is a powerful, low-cost and flexible alternative to traditional cameras.

Vodafone has partnered with visual verification solution experts iDefigo to jointly create the Vodafone Smart Camera solution.

Smart cameras can be deployed in virtually any location, giving you greater visibility wherever you need it. There’s no need for an external power source: the camera has integrated solar panels and a rechargeable lithium battery.

And because the camera uses Vodafone wireless IoT connectivity, it can securely transmit footage, via a cloud-based platform — giving you the quality of service you’d associate with a fixed-line camera. Our 4G IoT connectivity immediately transmits footage to the iDefigo secure cloud service, which you can then view on our web portal using your smartphone, tablet or PC.

Instant observations, anywhere
With the Vodafone Smart Camera, you can:

- **Safeguard remote assets**
  The camera can be placed in locations that lack power or network cables, such as new building sites or remote water culverts. Being cable-free doesn’t just mean that they are quick and easy to install, it also means that they can be discretely and securely installed anywhere.

- **Cut security costs**
  The camera is a low-cost alternative to security guards, and far more versatile than traditional CCTV — they can be easily moved to wherever they are needed.

- **Conveniently review footage**
  Our cloud-based solution makes it easy for authorised staff to review footage securely — even when they’re away from their office or monitoring centre.

- **Adapt as your needs change**
  The solution scales as your business requirements change. You can easily add to the number of cameras - out of the box - without disrupting your day-to-day operations, moving them to new locations whenever needed.

The benefits for your business
The Vodafone Smart Camera solution is built upon an IoT surveillance platform from iDefigo, a company that is world leader of security and surveillance technologies. The solution includes cameras, connectivity, image processing, cloud storage and customer apps. It is optimised for mobile IoT services and fully integrated with the Vodafone Global M2M Network.

1. **The camera**
   - An unobtrusive, ruggedised and portable design which is cable-free and easy to deploy. It captures footage in all weather conditions, day or night.
   - The camera is a fixed-position, solid-state design, with no moving parts. Power is provided by a lithium-ion battery, which lasts up to four weeks. Alternatively, it can be augmented with a compact solar panel, enabling it to operate indefinitely, without the need for any on-site maintenance.
   - It’s a low-power, out-of-the-box solution which can be up and running in a matter of minutes.

2. **Connectivity**
   - The camera is fitted with an integrated SIM which allows it to connect to the Vodafone Global M2M network.
   - A continuous roaming data connection automatically sits on the best available 2G, 3G or 4G mobile network at any particular site. This enables the solution to work in remote areas, as well as urban or high-connectivity locations, and makes it suitable for long-term or short-term surveillance needs.
   - The camera records high-definition footage, as and when required, sending it at fast transfer rates.

3. **iDefigo Secure Cloud**
   - There’s a direct connection from Vodafone infrastructure through to iDefigo’s private cloud-based management platform, where footage is hosted for 12 months.
   - This ultra-secure architecture means the encrypted footage never touches the public internet, providing customers with unrivalled security and peace of mind.

4. **Apps and Accessibility**
   - Authorised users can easily log on to the cloud management platform via any internet capable device such as a PC, smartphone or tablet, anytime.
   - The platform provides a powerful and simple interface for customers to manage access to footage and to search through events from cameras, wherever they may be.
   - The user-centric platform includes a number of features including ‘film-strip’ representation of images, for ease of scanning.
A comprehensive monitoring solution

The Vodafone Smart Camera gives you the reassurance that your assets are protected, and can be deployed in a variety of environments.

What’s included?

**Versatile IoT security cameras**
The Vodafone Smart Camera provides a high-quality record of events. The camera can be activated by motion, timed to capture footage at regular intervals, and be equipped with infrared spotlights for night time use. Vodafone will help to customise the camera to your specific needs.

**Extensive Vodafone Global M2M Network**
The camera connects to the Vodafone Global M2M network, which gives you reliable coverage wherever you need it. Our M2M network has the bandwidth to enable the cameras to send high-quality footage. It’s also secure, so you know the data you transmit will remain private. Our M2M SIMs automatically roam on to the best available network, in the unlikely event that they lose coverage, and are regionless, so can be deployed outside the UK without adding to your costs.

**An end-to-end platform**
Where your business requirements are complex, iDefigo can integrate AI services to create a custom workflow based upon the events recognised in your camera footage. The Vodafone Smart Camera uses iDefigo’s imagery analysis software to make it easier to identify important events. It is integrated with iDefigo’s IoT Surveillance Platform, which actively manages all communications with the cameras to ensure optimal performance across the Vodafone M2M network. All footage is immediately available to users in your organisation according to the camera access and security rules defined for each camera. All footage is hosted securely in iDefigo’s private cloud for 12 months, and can be accessed from a PC, smartphone or tablet.

**Professional services**
Our dedicated team of IoT experts is on hand to help you at every stage, from deploying your smart cameras to ongoing management. Our competitive SLAs ensure you always get the best out of the solution — so you’re in safe hands.
The ability to deploy low-cost cameras rapidly and without the need for any supporting infrastructure is an exciting proposition across a host of security and monitoring applications.

Preventing fly-tipping
Local councils spend millions of pounds a year dealing with fly-tipping. This anti-social problem results in unsightly and unhygienic mess, and is a major source of concern for law-abiding residents.

Increasingly, local authorities are relying on the fast and flexible deployment of discreet surveillance cameras to monitor fly-tipping hotspots. Sting operations can be set up quickly at targeted sites with two cameras deployed – one to capture vehicles entering and a wide-angle camera to record people dumping rubbish.

Sites can be centrally monitored by council staff to capture infringing activities and the footage can be used as proof for criminal proceedings and the issuing of infringement penalties.

Traditionally, having “eyes” on remote locations where fly-tipping often takes place can be problematic due to the lack of fixed-line communications and power. Battery and solar-powered cameras remove this problem.

Stopping thieves
The targeted motion activation capabilities of the Vodafone Smart Camera make it ideal for spotting unwanted intruders.

The camera has, for instance, been used by Vodafone UK’s security group as a means of managing copper theft at infrastructure facilities. Surveillance cameras can be deployed by security officers for short/medium term sting operations at troublesome sites.

Additionally, the Smart Camera is being adopted by housing associations and other residential groups who are keen to crack down on burglary and other anti-social crime such as vandalism.

One of the system’s major selling points is its ability to capture activity at all times of the day or night in high resolution – without the usual degradation in quality of CCTV still images.
Monitoring construction progress

Surveillance isn’t always about security. It can also be used as a means of ensuring that best-practice procedures are being followed at remote sites.

That’s true in the construction sector, where the Vodafone Smart Camera is being installed at the start of development projects for the monitoring of contract compliance. This can include the implementation of correct health and safety procedures, which is vital for the protection of staff wellbeing.

Cameras can also be used for project management purposes, acting as a means of ensuring that key construction milestones are being achieved on-time and in the correct order.

Surveillance can also provide a cost-effective way of monitoring key assets on construction sites, making sure they remain in good condition and are working as they should. The Smart Camera can also be used to monitor security at project sites - protecting materials and equipment.

Maintaining flood defences

The Environment Agency manages thousands of culverts across the UK. These structures allow flood water to drain off harmlessly into rivers and drainage systems. Blocked culverts are to be avoided at all costs, as they can cause water to back up and flood residential areas.

Traditionally, this infrastructure was maintained via a scheduled series of service visits: technicians would go out and physically check for blockages. The Environment Agency wanted to improve the efficiency of this maintenance activity by putting in place an early-warning system so that it could prioritise field visits by staff.

The solution has been the Vodafone Smart Camera, which has been installed at culverts and other infrastructure such as bridges and drains. A network of devices, each connected to a central platform and powered by 10W solar panels, provide regular visual updates of water levels and debris build-up at key sites, with the images viewed centrally, or by engineers on the move via a mobile device.

The Smart Camera network won’t entirely replace service visits, but the Environment Agency says it has led to a dramatic improvement in planning and resource efficiency.
Vodafone Smart Camera

Frequently Asked Questions

Q: Why is the iDefigo camera particularly suited for remote surveillance?
A: The camera has been specifically designed for unobtrusive operation in harsh environments. It is rugged and easy to install, making it perfectly suited for outdoor applications. It has also been designed with simplicity, yet high-performance, in mind. There are, for example, no motorised or moving components, which increases reliability and reduces maintenance costs. Installation is straightforward – the camera is fixed in position, pointed at the desired surveillance location, and then turned on. It's a simple and scalable design that takes the complexity out of security.

“... it is rugged and easy to install, making it perfectly suited for outdoor applications.”

Q: How do you ensure the camera is powered up when it needs to be?
A: The Lithium-ion battery pack can supply power for up to four weeks and can be quickly and easily replaced. There’s also an option to integrate a solar panel, which maintains the charge of the camera’s battery throughout daylight hours. The camera has very low-power requirements. This means that the battery, in combination with the solar panel, would be enough to keep it operating continuously, even if there has been cloud cover. The camera is a fit-and-forget solution that requires the absolute minimum maintenance.
Q: How does Vodafone’s connectivity support the system?
A: The camera is fitted with a Vodafone SIM card, enabling the footage to be sent securely and seamlessly across mobile networks. Once the camera is activated, the global roaming SIM picks up on the most suitable available network, meaning that there’s always a way of transmitting the data. The images are high-resolution, but can be sent across the networks with low latency, meaning the footage is instantly available to the end-user.

Q: How do you ensure security of the footage that’s been produced?
A: There’s a direct connection from the Vodafone infrastructure through to iDefigo’s private cloud. That’s an important consideration when it comes to cyber security, as the footage never touches the public internet. It goes straight from the cellular network to Vodafone’s infrastructure, and then via direct connection to the iDefigo management platform. All footage is then stored on a secure cloud service for 12 months, or longer if need be. The images are easily accessible for authorised users through a browser on any internet-capable device.

“The batteries, in combination with the solar panel, would be enough to keep it operating continuously, even if there has been cloud cover.”
Q: What are the major real-world use cases for the Smart Camera?
A: The camera works across a multitude of sectors, and is used primarily for security and monitoring purposes. There has been a lot of interest from local government which has deployed the technology as a means of dealing with the problem of fly-tipping. Historically, traditional fixed-infrastructure CCTV has taken a lot of time and money to install. This activity alerts fly-tippers, who then simply move on to another location. The Vodafone Smart Camera needs no wires, so it is very discreet. It can be installed at fly-tipping hotspots very quickly, with minimal visual disruption. There is also strong demand from housing associations, construction, transport and logistics, and warehousing. The Smart Camera is also proving popular among utilities such as gas and electricity companies, who tend to have distributed infrastructure, often in remote locations. It provides a cost-effective means of ensuring security at facilities such as reservoirs and substations, while also being used to monitor equipment to prevent failure. The other area is agri-business, which often has a need for expensive equipment and machinery to be installed in rural locations. In such cases, the Smart Camera can provide a flexible means of securing assets.

Q: Can the camera be used across more than one site?
A: The Smart Camera solution has been designed with scalability in mind. Customers can add or remove cameras as needed without additional integration requirements. It’s also possible to manage one or many cameras via the on-line portal. The solution takes the pain out of launching an IoT-enabled surveillance system.

“Customers can add or remove cameras as needed without additional integration requirements.”
Vodafone has more than 25 years of IoT experience and is widely recognised as an IoT leader by independent analysts. We have more than 1,400 dedicated IoT experts and manage more than 62 million IoT connections through our Global IoT Platform. Vodafone is one of the world’s largest telecommunications companies, with mobile operations in 26 countries, partners with mobile networks in a further 55 countries, and fixed broadband operations in 17 markets—we have the scale to support you wherever you have operations.

To find out more, visit vodafone.com/iot or email lot@vodafone.com