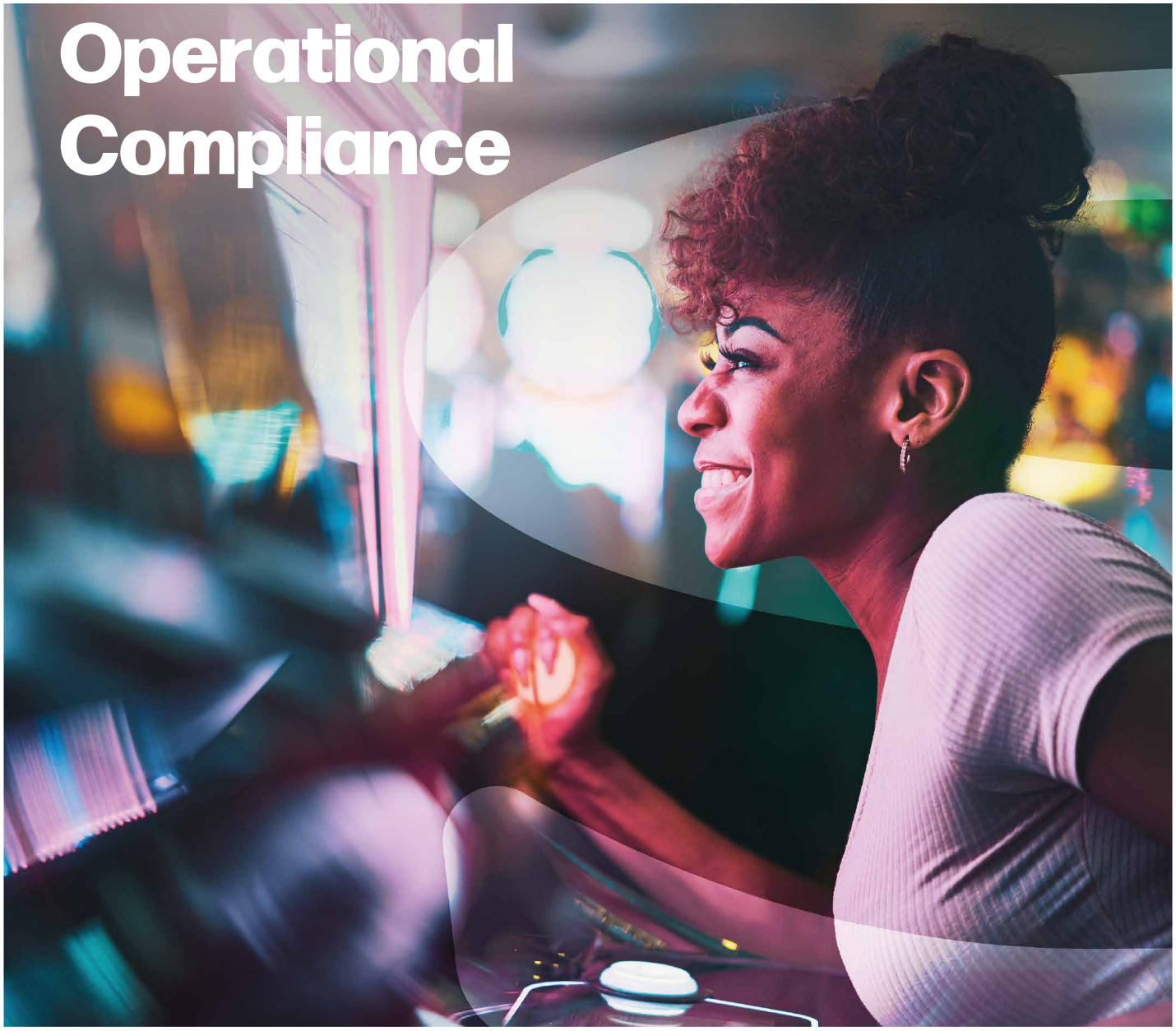
eBook

Achieving Regulatory and Operational Compliance



Casino Security and Surveillance

SYNECTICS

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This Guide outlines some of the latest surveillance capabilities available to operators who are looking to efficiently achieve regulatory and operational compliance.

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Welcome

Gaming is one of the most tightly regulated industries in the world, particularly when it comes to surveillance.

Losing just a moment of footage, live or recorded, can result in significant financial penalties or enforced closures, not to mention potential monetary loss due to missed indications of fraud, scams and theft. All of which ultimately affects profitability.

Specific regulatory demands vary by geography, but one thing is clear. System downtime is not acceptable under any circumstances.

And ‘uptime’ is not the only consideration. Image quality, retention rates, camera coverage for specific zones, access- right restrictions, and cybersecurity are all common regulatory requirements across the globe.

Achieving compliance with some or all of these requirements can seem daunting. But with the right measures in place, surveillance solutions can, and do, make compliance something that ‘just happens’.

Continuous Camera Coverage

Guaranteeing sufficient, uninterrupted camera coverage is a regulatory demand that all casino operators face.

Specific requirements vary by both geography and casino zone. In Singapore for instance, entrances, exits, gaming tables and cash cages must all be surveilled 24/7 without any blind-spots, while in Macau cameras must be placed to ensure a constant view of slots to monitor jackpot payouts.

Camera Placement & Type

To ensure all angles are covered in line with requirements, camera placement is critical. But so is camera type and specification.

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For instance, while two or three analog cameras may be required to adequately cover a specific table or cash cage, adopting HD IP or 4K technology – and benefiting from the wider visual range such solutions deliver – can reduce camera count significantly (reducing overall hardware maintenance costs) and may be preferable for priority zones where image detail is critical.

It is also worth considering the use of multiview or 'scene splitter' cameras to meet certain camera placement demands.

For example, 360-degree fisheye cameras with de-warping built-in, can include multi-view functionality that allows users to record and view a broad scene in fisheye mode.

They also enable up to four specific areas in quad view, again potentially reducing camera count requirements without compromising critical coverage.

Newer technologies such as multi-sensor panoramic cameras provide an alternative option. While more expensive than fisheye cameras, they provide the same full 360-degree view but provide significantly clearer images without the need for de-warping functionality and also offer benefits such as digitised zoom.

Staying 'on scene'

Just because a camera is set-up to cover a certain scene doesn't mean it will stay that way. Whether the cause is accidental e.g. a nudge during routine maintenance or due to deliberate camera manipulation, scene displacement is not uncommon.

Recognising and reporting when this occurs is sometimes a regulatory demand, for instance in Singapore, but always best-practice protocol.

It is also extremely time consuming. Checking thousands of cameras can take teams multiple shifts to complete. For time-efficient compliance, consider using centralised scene-check technology. This automates scene checks at user-specified time intervals using comparison analysis to detect even the slightest deviation in the scene covered.

Should changes be detected, an alert is issued and the scene is presented for operator review.

Image Quality

Image quality is a specific compliance area in its own right – whether externally enforced or linked to in-house standards – but should also be considered when planning camera placement in line with coverage requirements.

For example, lighting conditions can have a major impact on actual capability; it's no use having a camera in the right place if the footage captured is not up to scratch.

It is recommended that all HD IP cameras for gaming environments feature True WDR for guaranteed performance even in challenging low-light conditions for this very reason.

Combatting Camera Failure

Simply having the right number and type of cameras in exactly the right locations is no guarantee of constant coverage.

If a vital camera goes down for whatever reason, even sophisticated failover and redundancy measures may not be enough to guard against coverage loss.

Two Things Worth Considering Here Are Pre-Fail Indicators and Redundant Camera Frameworks

In many cases, factors that indicate imminent camera failure are detectable in advance but only through effective monitoring.

Using SNMP communication protocols, centralised command and control solutions are able to effectively monitor the health of any integrated device.

Thresholds for unacceptable performance based on the data received can then be alarmed to ensure technical issues can be investigated and, if necessary, remedied by maintenance teams well before the danger of camera failure is realised.

Where specific camera coverage is a high priority due to regulatory demands, another precaution worth considering is adopting a redundant camera framework.

Here, presets managed by a surveillance command and control solution automatically reposition 'back-up' PTZ cameras to cover vital fields of view should the primary camera feed go down.

Another option to ensure camera coverage even in the event of connection or network switch failure, is edge recording i.e. recording to the camera or an integral SD card.The storage capacity of modern SD cards is now large enough that it is possible to record significant timespans of footage using this method. In this scenario however, it is important to ensure the camera has an alternate power source.

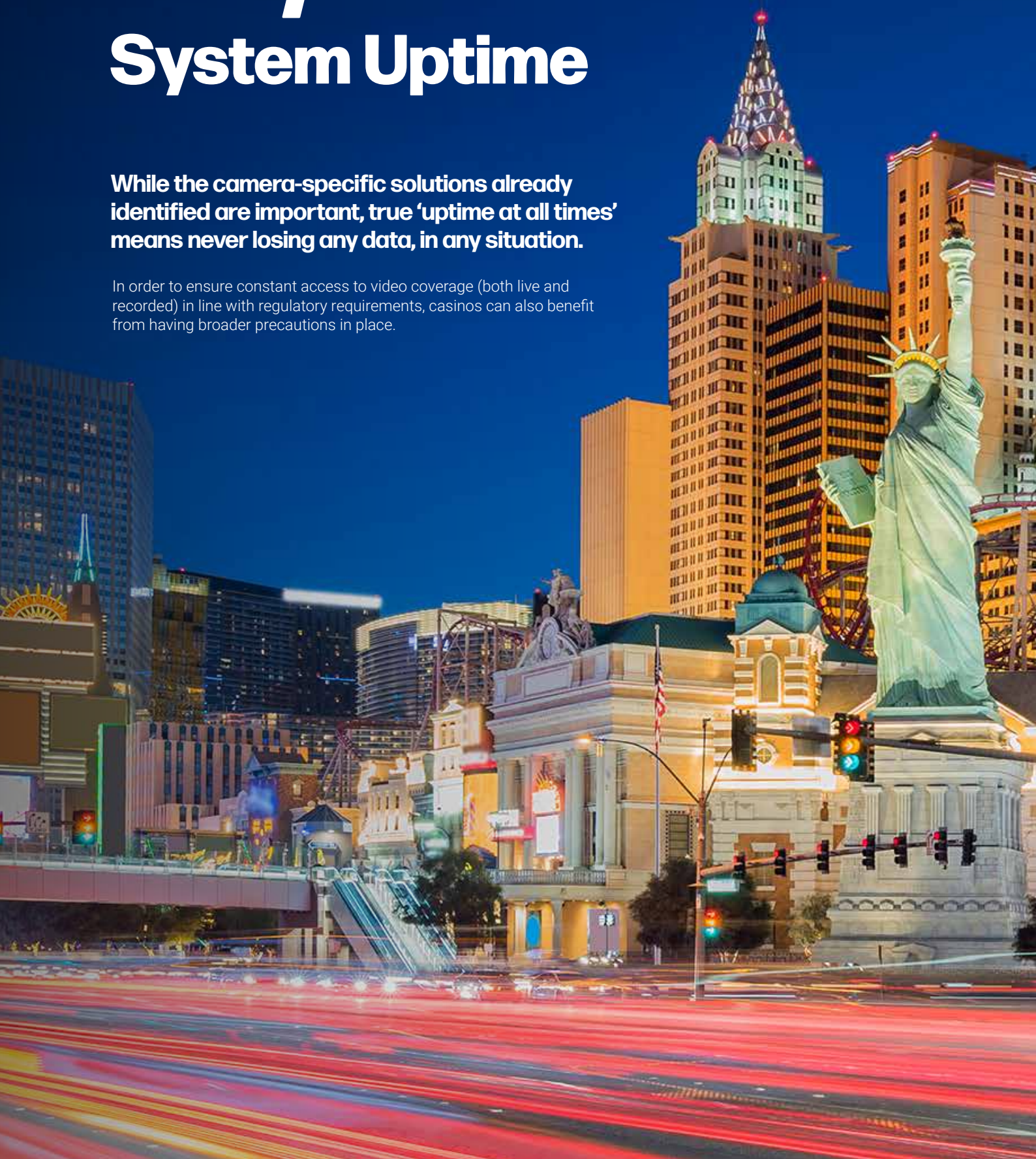
What to Expect From Your Solution Provider

A credible video and security management solution will be able to keep track of any localised edge recording, automatically retrieve the information from its temporary location, and seamlessly restore it to the primary server once any issues have been resolved – a process known as backfilling.

24/7 System Uptime

While the camera-specific solutions already identified are important, true 'uptime at all times' means never losing any data, in any situation.

In order to ensure constant access to video coverage (both live and recorded) in line with regulatory requirements, casinos can also benefit from having broader precautions in place.



Optimising Network Design

The right network design can help reduce risks to video capture, streaming and storage.

A hierarchical 'mesh' network topology is preferable as key components in the core, distribution, and access layer are all interconnected to facilitate multiple pathways for data relay.

An alternative option is to adopt a 'star' network topology whereby devices are directly connected to the core (so single pathways rather than multiple routes) but are supported by specific failover and redundancy measures.

Employing Failover Measures

Server virtualisation, achieved through either hardware or software failover solutions (or a mixture of both) is another mechanism casinos can employ to eliminate downtime and data loss.

With the first option, a secondary virtual server, or Virtual Machine (VM), is created by replicating data across multiple hardware components, should server 'A' fail, server 'B', a perfect replica, takes over.

This can, however, take up to a couple of minutes which is why software-driven server virtualisation may be a preferable solution.

'Hot swap' server replication ensures that
– in the event of a primary server issue
– continuous data access and control is maintained (through failover to a virtual backup platform) until the primary server is back online.

At this point, all data captured is copied back to the primary server for complete synchronicity, making the user experience seamless for the control room operator.

'Hot swapping' does not simply guard against core server failure. With an integrated security management solution driving the data capture and storage 'decision process', any hardware malfunction – for example a primary storage server or encoder problem – will automatically divert recording to the most appropriate temporary location while maintaining full viewing, control, and playback capabilities.

What to Expect From Your Solution Provider

Whether you require a 'new build' network or are working with legacy infrastructure, it is important to ask your surveillance solution provider to advise on network design factors that might impact on regulatory compliance. For example, camera count, bit rate, and routes through the network will all impact on bandwidth saturation levels which need to be within specific parameters to avoid data loss.

Guaranteed Image Retention

All casinos are governed by strict rules when it comes to image retention. The specifics vary by geography – rules in some countries require footage to be retained for a minimum of six months, others require images to be kept for just 14 days. In the US, rules change from state to state and also, in the case of tribal casinos, by specific property.

Furthermore, requirements can vary within an individual property. In some cases, while 'general footage' needs to be kept for 14 days, footage showing credit card swipes need to be retained for up to 90 days. Adopting the right failover and system resiliency measures are essential in meeting these obligations.

Automating and Enforcing Retention Requirements

Highly customisable command and control solutions allow casinos to record, retain and lock down footage for specific time frames, by individual camera, zone (e.g. a particular gaming table), or universally across the property.

By integrating with analytics and utilising an integral rules engine, you can ensure footage that matches specific customer-specified criteria, from POS transaction type to wins over a certain monetary threshold, or that takes place under 'incident' conditions, is recorded, stored and retained in line with regulatory demands and in-house protocols.

During a live incident, surveillance solutions can be programmed to encrypt and transfer pertinent surveillance footage from a primary storage device or edge-recording location to a dedicated 'evidence locker'.

Once there, it can be securely viewed and held for years if necessary but cannot be deleted or recorded over.

Storage Capacity

Larger properties, with camera counts in the thousands, can generate video data equivalent to that of a small city.Together with increased adoption of 'space hungry' HD IP and 4K cameras, capacity is clearly an issue.

Surveillance providers will take into account retention requirements and system load in order to ensure storage is never overwhelmed.

Additionally, some surveillance systems enable operators to alarm 'available storage' conditions so that even if a storage device were nearing capacity point, this could be identified, investigated and remedied well before any problem could occur.

As another back-up – in the event of a major technical issue that limits total storage capacity – 'hot swap priority' can also employed which automatically prioritises the storage of critical area camera footage (e.g. cash cages) for retention purposes.

Use of Compression

Another solution to consider is image compression i.e. minimising demand on storage by reducing the size of retained files. Using H.264 compression can reduce file sizes significantly, making it ideally suited to high-volume HD camera environments like casinos. MJPEG and MPEG4 compression techniques are also an option but are typically less suited to gaming environments.

H.265 compression is also now available, largely driven by the development of 4K cameras, but large-scale surveillance users such as casinos need to consider a number of factors before adopting.

While promising much in terms of compression without impacting on image quality, the increased processing capabilities needed introduce issues in terms of 'live view' latency and multi-screen monitoring that – for now – may make it unsuitable for some casinos.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Consistent Video and Image Quality

Image quality is another area of critical compliance for casinos.

Though not always enforced by external regulatory bodies, failure to address and enforce consistent image quality standards can impact on other mandatory requirements relating to adequate coverage, and result in missed security incidents.

Crucial Capabilities

An output of 30 frames-per-second is typically what's required by the majority of regulations concerning image quality. However, higher frame rate capabilities – between 50 and 80 frames-per-second – are desirable to maximise image quality in fast-paced, low light conditions. It is also advisable to select cameras featuring True WDR.

Monitor Performance

To ensure compliance, it is essential operators know how their cameras are performing at all times. If frame rates start to drop for any reason, this can breach quality stipulations but also leave casinos exposed to risk.This is solved by integrating cameras and alarming frame rate thresholds to ensure operators are alerted to any deviation from expected performance.

Evidential Integrity and Security

Casinos face a range of regulatory and procedural compliance requirements in terms of safeguarding the integrity of data captured and controlling access to it.

In addition to supporting potential criminal prosecution of identified incidents, applying strict system access and security measures also helps operators guard against external threats.

Evidence Management Solutions

To support casinos in meeting data integrity, most leading surveillance command and control solutions feature a range of evidence management tools to help automate vital data and system security procedures. Ideally, these should also be linked to incident management tools.

For example, if a 'live incident' is triggered – either by an operator who has spotted suspicious activity or by the system itself based on rules applied to data gathered from integrated systems – all subsequent video footage, associated evidential data and operator activity is logged, SHA-2 encrypted, and moved to a secure evidence locker.

Once here, only authorised personnel can access, view or supplement the now password protected evidence. The original evidence cannot be changed.

It can be securely viewed and held for years if necessary but cannot be deleted or recorded over. As part of a casino's standard disaster preparedness and resilience measures, the secure evidence locker should be backed up regularly.

Strict User Access Rights

Guaranteeing that 'authorised personnel' are indeed authorised, is another vital consideration.

For this reason, casinos should look for surveillance solutions that support real- time integration with personnel directories and domain controllers (i.e. user name and password management systems) to ensure access is always based on up-to- date information in line with shift patterns, promotions, demotions and staff turnover.

Surveillance supervisors should also be able to create operator profiles unique to each member of their team in order to customise access to specific system features and cameras, automating alterations in line with role and personnel changes.

For multi-site deployments, system access rights can also be assigned by location.

Integrations That Don't Breach 'Dark Networks'

Some countries legislate that surveillance networks have to remain completely 'dark' – i.e. allow no external links whatsoever.

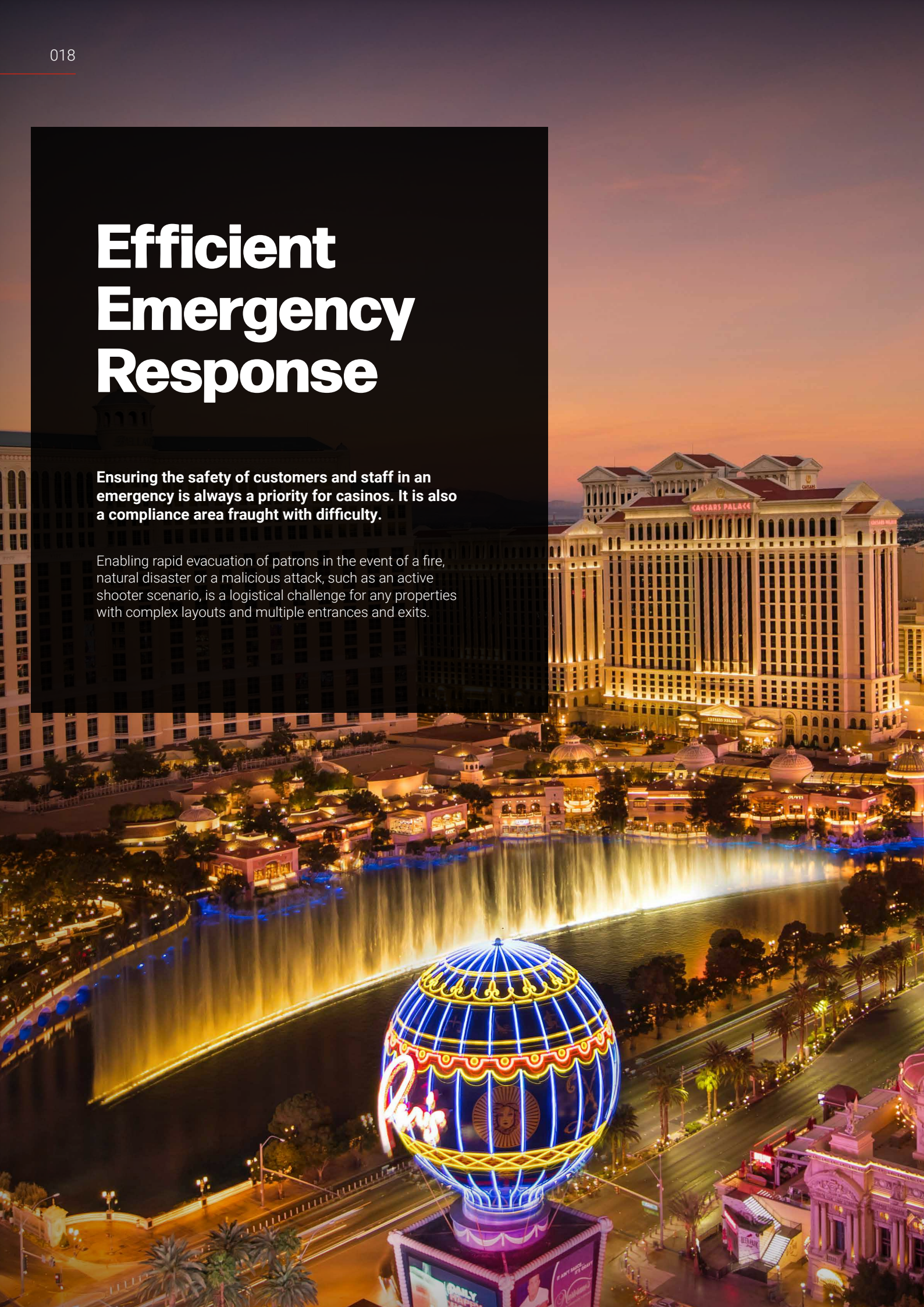
Because of this, being able to strictly control the way data is transferred and shared between systems is a technical capability casinos should look for in any solution adopted where integration between surveillance and third-party solutions is a requirement.

Leading open protocol command and control solutions should enable casinos to monitor, manage and mine data generated from a wide range of integrated security, gaming and management systems to optimise situational awareness and maximise profitability.

Efficient Emergency Response

Ensuring the safety of customers and staff in an emergency is always a priority for casinos. It is also a compliance area fraught with difficulty.

Enabling rapid evacuation of patrons in the event of a fire, natural disaster or a malicious attack, such as an active shooter scenario, is a logistical challenge for any properties with complex layouts and multiple entrances and exits.



In many countries, casinos have to develop and submit plans of such eventualities, detailing specific protocols in place for different scenarios.

Failure to ensure those plans are enacted should the worst happen, can result in legal or financial penalty but more importantly, injury or loss of life.The right surveillance solution can help ensure compliance under critical conditions.

Emergency System Integration

In addition to enabling casinos to integrate surveillance with third-party gaming systems, open architecture command and control solutions also facilitate integration with key risk detection and emergency systems, from smoke alarms to metal detectors.

When paired with mapping capabilities – customisable to gaming floor and hospitality area layouts – this enables operators to immediately identify exactly where the danger is and, thanks to automated on-screen prioritisation of proximity cameras, verify the danger detected in order to enact the right Standard Operating Protocol (SOP). Solutions can also be programmed to automatically enact SOP conditions based on alarm criteria met.

Compliance Through Dynamic Workflows

All casinos will have different SOPs that vary according to evolving conditions. As such, the use of dynamic workflows – on-screen 'next step' guidance for operators – can be a huge help in terms of consistent protocol application in rapidly changing circumstances.

What to Expect From Your Solution Provider

- **Your provider will work alongside you to ensure that emergency plans are reflected by real-time data and operator-driven triggers to generate the right advice for operators in any given situation.**
- Additionally, open architecture solutions that facilitate interoperability with key systems help ensure that any guidance given is always actionable. For instance; enabling access controlled areas to be unlocked to facilitate faster evacuation routes or open areas to be locked down to contain threats.This also enables direct liaison (through integrated communications) with security teams and emergency services, automation of public address systems, and control of lighting to support exit direction.

Enforcing Exclusion Lists

Having the ability to detect cheats and 'persons of interest' is a must for casinos in terms of protecting their bottom line, but being able to detect specific individuals can also be a regulatory demand.

Self-exclusion or general exclusion lists are perhaps the most common example. In letting individuals play who have placed themselves on exclusion lists due to gambling addiction, operators are open to legal, financial and reputational risk.

Adopting Analytics

One of the most obvious tools available to help identify individuals not permitted to enter or play at casinos is facial recognition.

Working to known 'advantage player' watch-lists and self exclusion lists, casinos using surveillance solutions that integrate facial recognition software can ensure operators are automatically alerted to the presence of individuals.

Once presence is confirmed, operators can then action required response, for example pushing an image of the individual and their location to security or management teams on the gaming floor in order to escort the person of interest from the premises.

Protecting Patron Privacy

Safeguarding public privacy is of significant concern for any organisation within the leisure industry, but particularly for casinos.

The high level of surveillance used and potentially sensitive nature of footage captured – especially in terms of 'high rollers' or high-profile guests – places a substantial responsibility on operators to carefully handle access to, and storage of, video content.

While not a standard regulatory requirement, increased litigiousness, global emphasis on privacy rights and customer service best-practice, all push this area higher up the agenda which is why many properties have developed strict in-house policies that need enforcing.

Limitations and Image Lockdowns

Casinos should look to adopt surveillance solutions with highly customisable user access rights to ensure that access to live and recorded footage is automatically cross-referenced with live personnel files and limited to clearance levels authorised. Similarly, evidence management tools open up the opportunity to save sensitive footage to specific evidential lockers guarded by download and file share restrictions – functionality which may come into play, for example, to ensure celebrity footage cannot be copied or externally shared.

Another useful function to consider is video blackout capability. As the name suggests, this feature, enables authorised users to black out specific areas of video (stored as meta data) – such as faces, identifying brands or clothing – based on who is viewing the footage without limiting access to specific camera feeds. Only personnel with the required clearance level can then edit or remove blackouts even if the files in question need to be exported for any reason.

Compliance by partnership

While this Guide has highlighted some of the most common requirements casinos face in terms of achieving regulatory compliance and best practice, it is by no means an exhaustive list.

Each property is different and as such will require an end-to-end solution tailored to meet specific needs. In this respect, it is important to select a provider able to demonstrate technical capability, sector experience and a partnership approach that spans initial consultation through to training and after-sales support.

For more information on how Synectics works with customers in the gaming industry, visit synecticsglobal.com

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