

## Technical Terms

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# TECHNICAL BULLETIN

<b>A</b>	
<b>ABF</b>	Auto Back Focus
<p>ABF (Auto Back Focus) technology allows box cameras to adjust the position of the image sensor to obtain optimal focus. This feature can also be accessed via the Web client.</p>	
<b>ANR</b>	Automatic Network Replenishment
<p>NVRs with the ANR (Automatic Network Replenishment) function can automatically store video data on the IPC storage card when the network is disconnected. After recovery of the network, the NVR automatically retrieves the video data stored on the camera.</p>	
<b>Audio Loss Detection</b>	
<p>Audio Loss Detection is one of the exception detections in Smart Features set. When this function is enabled, alarm actions will be triggered when there is audio loss.</p>	

# TECHNICAL BULLETIN

<b>B</b>	
<b>BLC</b>	Backlight Compensation
<p>BLC (Backlight Compensation) compensates for the luminance of video captured in a backlit environment, while maintaining the luminance of the overall video sequence. Simply put, BLC enables objects that appear dark to be visible against a very bright background such as in front of a window or entrance. BLC is usually effective for some specific region in the video, as the background is usually overexposed.</p>	
 <p>The image shows two side-by-side frames of a person walking in a brightly lit area. The left frame, labeled 'Original Image', shows the person as a dark silhouette against the bright background. A red circle highlights the person, and the word 'Dark' is written above it. The right frame, labeled 'BLC Enabled', shows the same person clearly visible against the bright background. A red circle highlights the person, and the word 'Clear' is written above it. Below each frame are the labels 'Original Image' and 'BLC Enabled' respectively.</p>	

<b>D</b>	
<b>DIS</b>	Digital Image System
<p>DIS (Digital Image System) cameras are a new series of analog entry-level products. With excellent image quality, low power consumption, and high reliability, DIS cameras can provide a perfect cost-effective alternative to traditional analog cameras.</p>	

# TECHNICAL BULLETIN

<b>Defog</b>	
<p>By modeling the imaging features of smoke, dust, fog, etc., defog technology effectively restores details and color to obtain accurate and natural video. Defog technology helps maintain clarity in images captured in poor weather conditions such as rain, smog, or fog.</p> <div></div> <div></div> <div>Original Image</div> <div>Defog Enabled</div>	
<b>Digital Watermark</b>	
<p>Digital watermark technology embeds the device information onto the recorded video. Digital watermarks may be used to verify the authenticity or integrity of the video or to show the identity of its owners.</p>	
<b>Defocus Detection</b>	
<p>Defocus detection is one of the exception detections in Smart Features set. When this function is enabled, alarm actions will be triggered when the camera is out of focus.</p> <div></div> <div>→</div> <div></div> <div>Defocus detection</div>	

# TECHNICAL BULLETIN

<b>3D DNR</b>	Digital Noise Reduction
<p>Cameras adopt 3D digital noise reduction to provide images with less noise in low-light surveillance scenes compared to conventional cameras. 3D DNR can be used to enhance image quality and save bandwidth.</p>	
	
Original Image	After 3D DNR

<b>E</b>	
<b>EZVIZ</b>	
<p>EZVIZ is a video-service application designed especially for consumer markets. EZVIZ incorporates the following key features:</p> <ol style="list-style-type: none"> <li>1) Easy P2P access: easy to use, no port mapping configuration required</li> <li>2) Private network penetration: solves the problems of private IP address and DDNS shortage</li> <li>3) Value-added service: push alarm, two-way audio, etc.</li> </ol> <p>EZVIZ can be used in retail stores for safeguarding or in residences for elderly and child care. We provide free EZVIZ apps, available on iOS and Android. For more information, please go to <a href="http://www.ezviz7.com">www.ezviz7.com</a>.</p>	
<b>EIS</b>	Electronic Image Stabilization
<p>In conditions with slight vibrations (e.g., an electrical pole in strong winds), videos will appear fuzzy due to the vibration. EIS (Electronic Image Stabilization) can help reduce the effects of vibration in a video.</p>	

# TECHNICAL BULLETIN

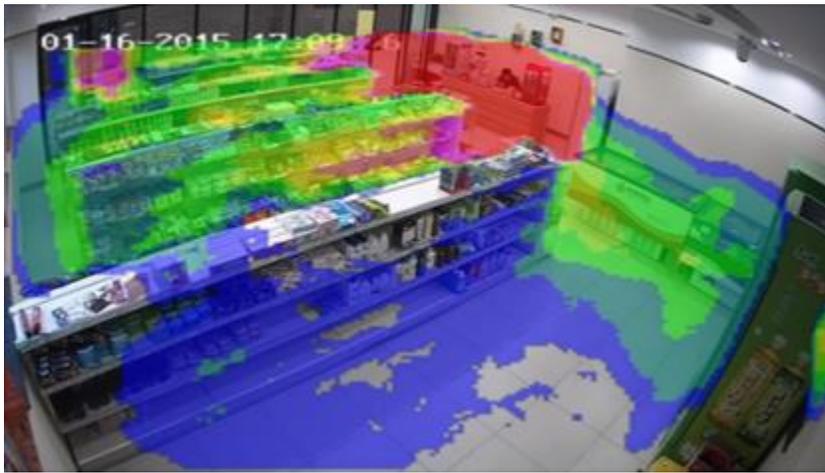
<b>F</b>	
<b>Face Detection</b>	
<p>Face Detection is one of the detection features in Smart Features set. With face detection technology, a network camera can accurately detect human faces, capture facial images, or trigger an alarm.</p>	
	

<b>H</b>	
<b>HDD Group</b>	
<p>HDD Group mode is one of the HDD storage modes in DVRs/NVRs. Multiple HDDs can be managed in groups. Video from specified channels can be recorded onto a certain HDD group through HDD settings.</p>	
<b>HDD Quota</b>	
<p>HDD Quota mode is one of the HDD storage modes in DVRs/NVRs. Each camera can be configured with an allocated quota of HDDs to store recorded files.</p>	

# TECHNICAL BULLETIN

## Heat Map

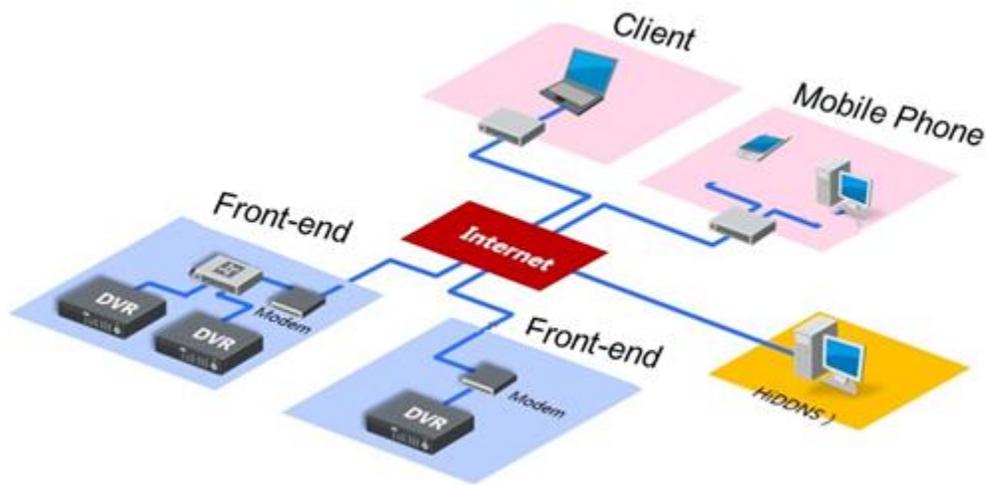
The video surveillance heat map records the motion of customer foot traffic over a period of time and displays temporal density and spatial statistics in different colors. For instance, in the figure below red shows the areas customers most frequently visited and tended to stay longer, and blue reflects otherwise. Heat map is ideal for use in locations such as supermarkets, retail stores, etc., to help businesses identify the most popular merchandise and where to place products in order to increase sales.



# TECHNICAL BULLETIN

## SimpleDDNS

SimpleDDNS is a FREE dynamic domain name server provided which offers persistent domain name for non-static IP devices. DDNS technology is widely used in various Hikvision devices (e.g., DVR, NVR, IPC, etc.) without having to register for a third-party domain name. When you register the service, you can use a fixed domain name to access your devices that have a dynamic IP address. Please refer to this link for detailed [instructions](#) on how to configure SimpleDDNS for devices.



## HLC

High Light Compensation

In conditions with a strong light source towards the camera, there will be over-exposed areas, or “high light.” The HLC (High Light Compensation) function can automatically recognize and constrain the high light to make objects more distinguishable.



Original Image



HLC Enabled

# TECHNICAL BULLETIN

<b>HD-TVI</b>	High Definition Transport Video Interface
HD-TVI (High Definition Transport Video Interface) is an open standard for analog video transmission and is based on the original analog transmission media. The advantages of HD-TVI are as follows: 1) Farther transmission distance 2) Higher video resolution 3) Reliable anti-interference performance as it carries low-frequency signal	

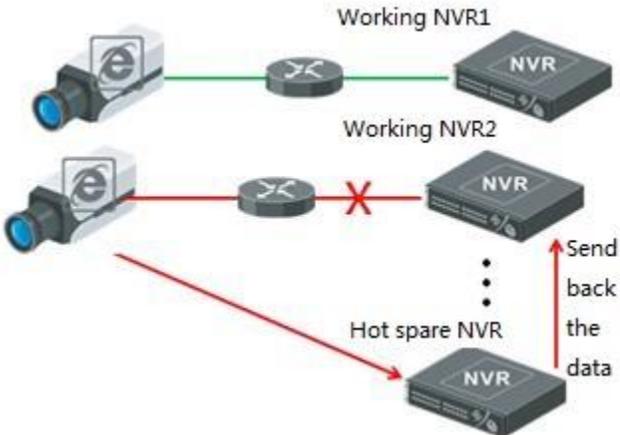
<b>I</b>	
<b>ICR</b>	IR Cut filter Removable
Cameras with the ICR (IR Cut filter Removable) function have a mechanical IR filter that filters infrared light during the day to correct color casts caused by infrared light. At night the camera removes the filter automatically to let infrared light pass through, enhancing night visibility.	
<b>Intrusion Detection</b>	
Intrusion detection is a behavior analysis function in Smart Features set. If a person enters and loiters in a pre-defined virtual region, the camera will automatically detect the event and can trigger alarms or recording if pre-configured. By applying the latest algorithm, it automatically analyzes the intruder's dimension ratio to reduce false alarms. Intrusion detection is extremely beneficial for defined area protection.	
	

# TECHNICAL BULLETIN

<b>L</b>	
<b>Low Bit Rate</b>	
	
<p>By applying an advanced codec (compressor/decompressor) algorithm, Smart IP cameras can realize efficient encoding and further minimize the system's load and storage requirements. At a very low bit rate streaming condition, 720p resolution at a 2 Mbps bitrate, 4-Series cameras are able to increase the image quality up to 30 percent.</p>	
<b>Line Crossing Detection</b>	
<p>Line Crossing detection is one of the behavior detection features in Smart Features set. If a person crosses a pre-defined virtual line, the camera will automatically detect the event and can trigger alarms or recording if pre-configured to do so.</p>	

<b>M</b>	
<b>Motion Detection</b>	
<p>If there is any motion in the configured detection area, the camera will automatically detect the event and can trigger preconfigured alarms or recording. Users can set sensitivity level, detection area, and arming schedule accordingly.</p>	
<b>Multi-Address Mode</b>	
<p>Multi-address mode is an NVR (Network Video Recorder) function on networks with more than one NIC (Network Interface Controller). Each NIC works independently with separate parameter settings, which can be assigned with a different IP address in a different network. Multi-address mode can be used to establish network isolation.</p>	

# TECHNICAL BULLETIN

<b>N</b>	
<b>Net-Fault Tolerance Mode</b>	
Net-Fault Tolerance Mode is an NVR (Network Video Recorder) function on networks with more than one NIC (Network Interface Controller). All the NICs use the same IP address. If a working NIC breaks down, others will continue to work and the NVRs' network connection is not affected.	
<b>Hot Spare</b>	
Hot spare protects the system against NVR (Network Video Recorder) network failures. When an NVR fails to connect to the network, a hot spare NVR will take its place to ensure data integrity and reliability. After the failed NVR is online, the hot spare NVR will send the data back to the working NVR.	
	

<b>O</b>	
<b>Object Removal Detection</b>	
Object Removal Detection is one of the behavior analysis detections in Smart Features set. If objects are removed from a pre-defined region, such as exhibits on display, the camera will automatically detect the event and can trigger alarms or recording if pre-configured.	

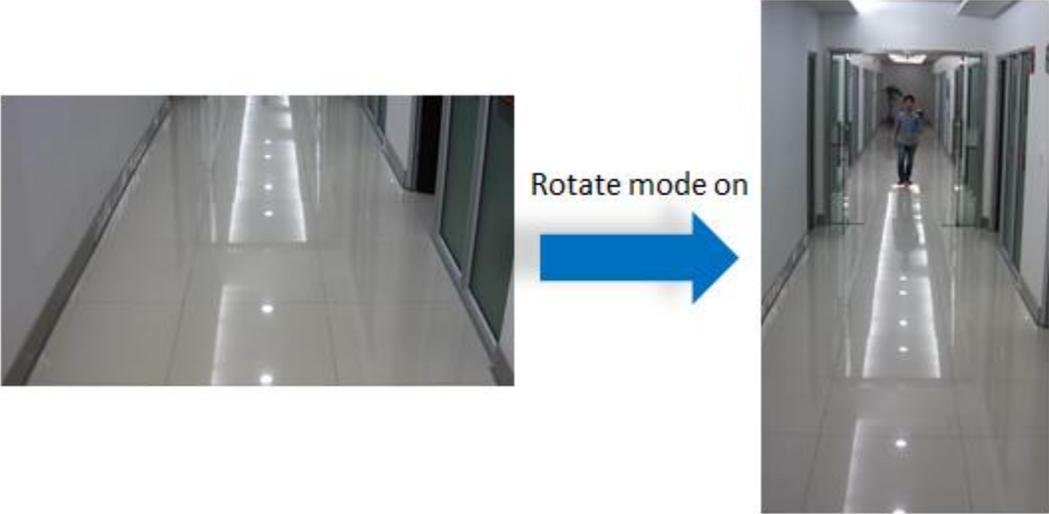
# TECHNICAL BULLETIN

<b>P</b>	
<b>People Counting</b>	
People Counting is one of the features in Smart Features set. Cameras with the people counting function are usually installed vertically to the entrance gate of hotels, supermarkets, museums, etc. The number of people that enter and exit the room can be counted and displayed on the screen in real time.	
<b>Privacy Mask</b>	
Privacy mask is used to block or mask certain areas of a scene from viewing and recording to protect privacy.	
<b>P-Iris</b>	
The Smart IP camera adopts the most advanced iris control technology, P-iris, which allows for keeping accurate and consistent sharpness and depth of view.	
	
Conventional lens	P-iris lens

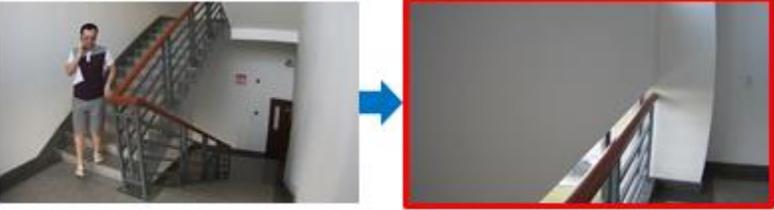
# TECHNICAL BULLETIN

<b>R</b>	
<b>ROI</b>	Region of Interest
<p>In some surveillance scenarios, users pay special attention only to a certain region instead of the entire image. The region that attracts special attention is known as the region of interest, or ROI. The ROI encoding method was developed to provide different compression levels between the ROI and background information in order to capture clearer key information without increasing the overall bitrate. The application of ROI encoding technology helps to conserve bandwidth and optimize the bitrate resource allocation, thus ensuring the image quality of the region of interest.</p>	
<p style="text-align: center;"><b>1080p@2M, ROI OFF</b>                      <b>1080p@2M, ROI ON</b></p> <div style="display: flex; justify-content: space-around;"></div>	
<b>RAID</b>	Redundant Arrays of Independent Disks
<p>RAID (Redundant Array of Independent Disks) is a storage technology that combines multiple disk drive components into a logical unit. A RAID setup stores data over multiple hard disk drives to provide enough redundancy so that data can be recovered if one disk fails. Data is distributed across the drives in one of several ways called “RAID levels,” depending on what level of redundancy and performance is required.</p>	

# TECHNICAL BULLETIN

<b>Rotate Mode</b>	
<p>In a vertically-shaped location such as a hallway or corridor, a horizontal-shaped image could result in pixel wastage. Rotate Mode can change the image from horizontal to vertical, so as to maximize pixel usage and avoid wasting bandwidth and storage space.</p> <div></div>	
<b>Region Entrance</b>	
<p>Region Entrance is a behavior analysis function of Smart Features set. If someone enters a pre-defined virtual region, the camera will automatically detect the event and can trigger alarms or recording if pre-configured.</p>	
<b>Region Exiting</b>	
<p>Region Exiting is a behavior analysis function of Smart Features set. If someone exits from a pre-defined virtual region, the camera will automatically detect the event and can trigger alarms or recording if pre-configured.</p>	

# TECHNICAL BULLETIN

<b>S</b>	
<b>Smart IR</b>	
<p>The improved Smart IR function adjusts the IR strength to have better visibility depending on specific requirements. Smart IR is usually used to solve the problem of IR over-exposure in close shots.</p>	
	
<p>Smart IR ON</p> <p>Smart IR OFF</p>	
<b>Smart Tracking</b>	
<p>The Smart Tracking function is an innovative technology for PTZ dome cameras, which can enhance the effectiveness of the video surveillance system. In surveillance scenes where the occasional presence of people or vehicles require special attention (e.g., bank vaults, hotel corridors, parking garages, etc.), smart tracking can be used to detect moving objects and follow their movements until they're out of view.</p>	
<b>Scene Change Detection</b>	
<p>Scene change detection is a behavior analysis function of Smart Features set. If someone changes the camera's viewing direction so that the camera captures a different scene, the camera will automatically detect the event and can trigger alarms or recording if pre-configured.</p>	
	
<p>Scene change detection</p>	

# TECHNICAL BULLETIN

<b>Smart Playback</b>	
<p>Smart Playback is a feature of Smart Feature set. Smart Playback provides an easy way to go through less important information quickly. In Smart Playback mode, the system will analyze the video containing the motion or VCA information. The video with motion or VCA will be played at normal speed while the one without motion or VCA information will be played at up to 16-times speed. The Smart Playback rules and areas are configurable.</p>	
<b>Sudden Audio Increase/Decrease Detection</b>	
<p>Sudden Audio Increase/Decrease Detection is a behavior analysis function of Hikvision's Smart Features set. If there is sudden audio change, either increase or decrease, the camera will automatically detect the event and can trigger alarms or recording if pre-configured.</p>	
	Self-Monitoring Analysis and Reporting Technology
<b>S.M.A.R.T.</b>	
<p>S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) is a monitoring system for HDDs to detect and report on various indicators of reliability in the hopes of anticipating failures.</p>	

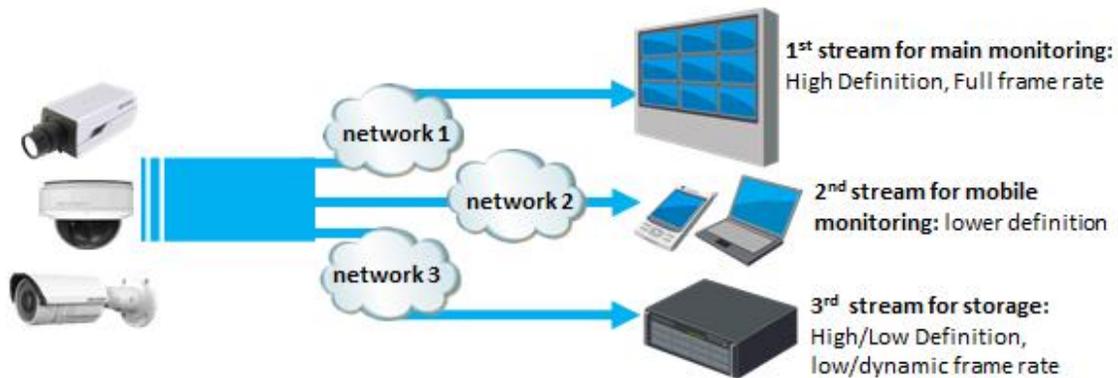
<b>T</b>	
<b>TVI HD</b>	
<p>Based on the HD-TVI standard has developed its revolutionary HD analog solution. It enables reliable long-distance analog HD video transmission over coaxial cable. Analog users can enjoy HD without replacing their existing cabling structure and upgrading to IP. Also, HD DVR supports self-adaptive access with normal analog cameras and HD cameras. What's more, HD analog solution offers seamless compatibility with various third-party devices that adopt the HD-TVI standard as well.</p>	

# TECHNICAL BULLETIN

## Triple Streams

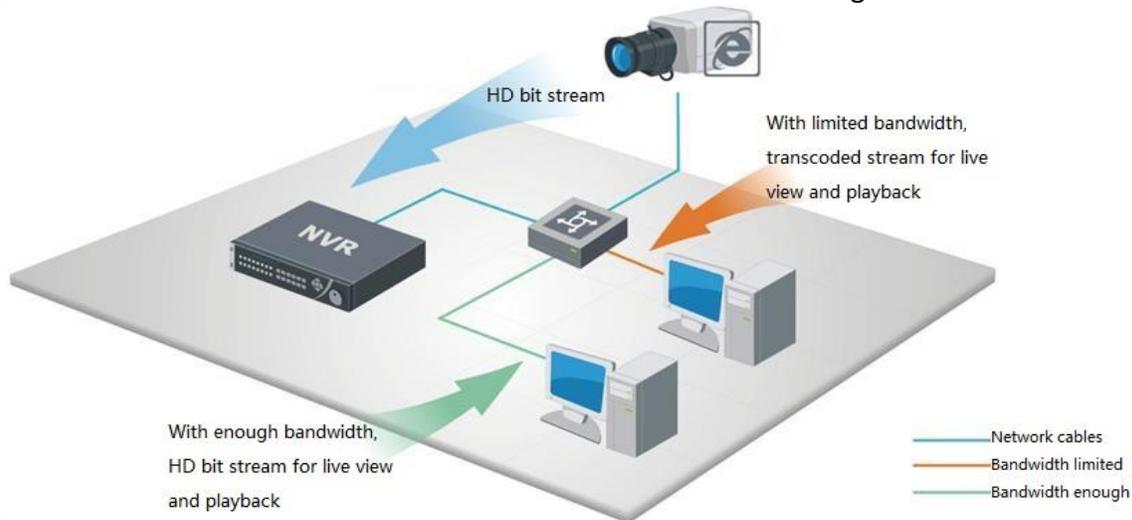
Triple streams provide much more flexibility to users by allowing different data streams to be sent simultaneously. Each stream has independent purposes:

- The first stream with high resolution and full frame rate can be used for main monitoring.
- The second stream with lower resolution can be used for mobile monitoring.
- The third stream with high, low, or dynamic resolution offers more flexible choices.



## Transcoded Stream

NVRs support a transcoded stream for remote live views and playback. Under situations with limited bandwidth, users can use a transcoded stream to lower the resolution, bitrate, and frame rate of the original bit stream to fulfill the needs of a low-bandwidth network and offer more solutions for remote monitoring.



# TECHNICAL BULLETIN

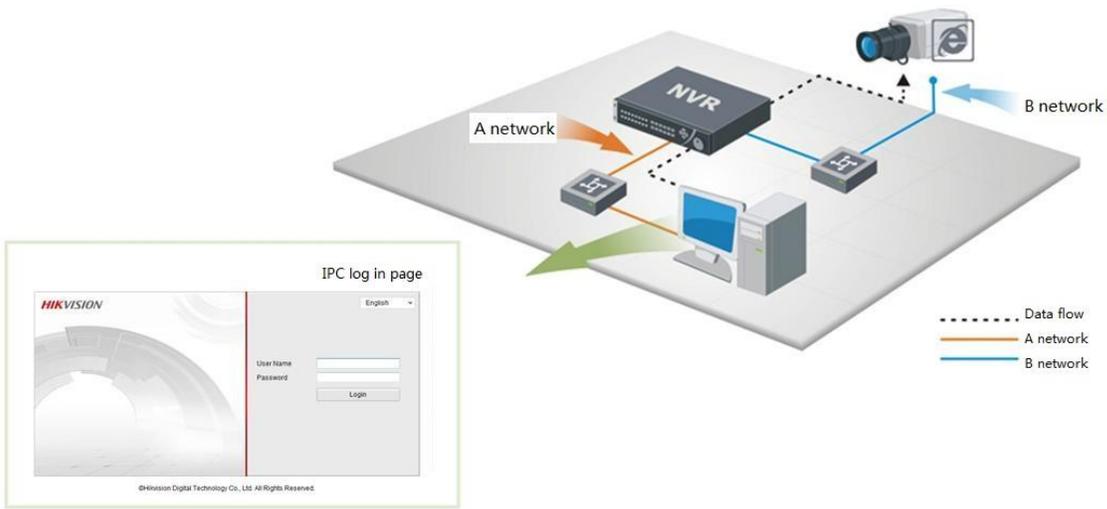
<b>U</b>	
<b>Unattended Baggage</b>	
Unattended Baggage is one of the behavior analysis functions of Smart Features set. If an object(s) is removed from a scene (e.g., baggage, purse, dangerous materials, etc.), the camera will automatically detect the event and can trigger alarms or recording if so pre-configured.	

<b>V</b>	
<b>VCA</b>	Video Content Analysis
VCA (Video Content Analysis) is the capability to analyze video automatically to detect and determine temporal and spatial events. Many smart functionalities can be implemented in VCA such as intrusion detection, line crossing detection, etc.	
<b>VQD</b>	Video Quality Diagnosis
VQD (Video Quality Diganosis) is a feature that monitors the video for abnormal qualities (i.e., blurred image, abnormal brightness, and color cast). An alarm will be triggered and linked with configured response actions.	

# TECHNICAL BULLETIN

## Virtual Host

Virtual Host is an NVR (Network Video Recorder) function that lets users link directly to an IPC's configuration Web page through the Internet Explorer (IE) browser. Virtual Host solves the issue of logging into an IPC when the IPC is in a different network from the NVR, making the system more convenient and user-friendly.



# TECHNICAL BULLETIN

<b>W</b>	
<b>WDR</b>	Wide Dynamic Range
<p>In conditions with very bright and dark areas, such as at an entrance door in an office building or an entranceway to an indoor parking garage or tunnel, a camera may capture over-exposed images in bright areas and under-exposed images in dark areas, which greatly affects image quality. A camera with WDR (Wide Dynamic Range) can help solve this issue. By combining images with short exposure (for bright areas) and long exposure (for dark areas) into one image, WDR technology captures both bright areas and dark areas clearly.</p>	
<p>Over-exposure</p>  <p>BLC Enabled</p>	<p>Clear</p>  <p>WDR Enabled</p>

<b>Z</b>	
<b>Zero Channel</b>	
<p>For remote access, users are able to combine multiple channel videos into one zero channel and save transmission bandwidth.</p>	
