VCAcore Release Notes

VCAcore Version: **1.6.0**

Release date: **17/05/2022**

VCAcore is an analytics engine developed by VCA Technology and is available on dedicated hardware devices such as the VCAbridge unit, a standalone application for Windows and Linux (VCAserver) and as the VCAsdk libraries which can be integrated into camera and DVR firmware or embedded into VMS applications.

The release notes outline all the changes made to VCAcore in this release period. Changes and features described are valid for all platforms which VCAcore is distributed on (VCAserver and VCAsdk) unless otherwise stated.

Index

Release Summary

The v1.6.0 release is the latest major feature release for VCAcore, introducing a host of new features and improvements to the VCA trackers and rules. As part of this release we have made some changes to the VCAcore APIs. We aim to never make changes which will effect our integration partners, however, these changes have been introduced to make the API simpler and more future proof. Details of these changes can be found in the Known Issues section.

Supported Products

- VCAserver (Windows 10 x86)
- VCAserver (Ubuntu 18.04 x86, Ubuntu 18.04 ARM)
- VCAsdk (Windows / Ubuntu 18.04 x86)

New Features

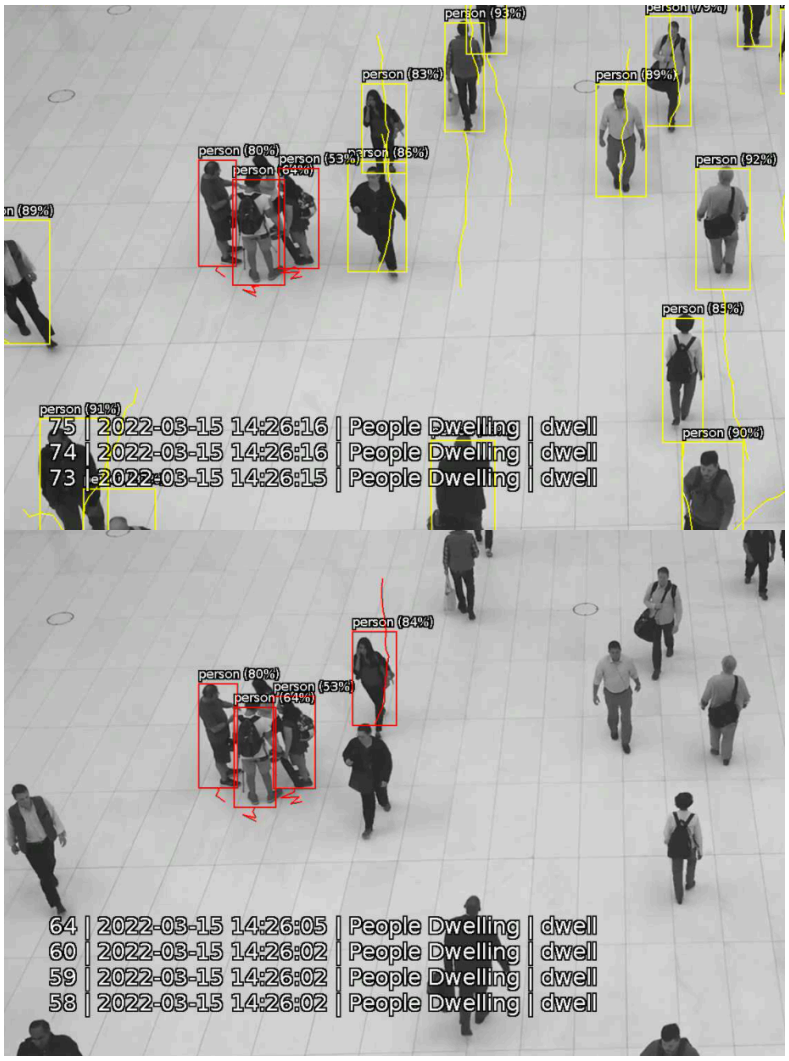
Fall Detection Event

A new Fall Detection algorithm has been introduced which will allow for tracked objects, classified as `person` by the DLPT, to be labelled as fallen. A Fall rule has also been introduced, allowing for events to be generated when an object is detected as fallen in a specific zone. The rule can specify both a time an object just be consecutively classified as fallen as well as a minimum confidence threshold.

The Fall Detection algorithm works by evaluating the bounding boxes of those objects detected as Person. As such, there is a computational overhead on the GPU for using the algorithm.

Display Only Alarmed Objects

A new burnt in annotation option has been added to only show the bounding boxes of tracked objects which have triggered a rule. Below is an example of a busy scene with a Dwell rule trigged by the static group of people. On the left; `Display Only Alarmed Objects` is `off` and the bounding boxes of all tracked objects can be seen. On the right; `Display Only Alarmed Objects` is `on` and only the bounding boxes of those people triggering the rule can be seen.



This feature is designed to make footage review easier, especially for busy analytics channels, or those with many rules configured.

Deep Learning People Tracker

The model driving the Deep Learning People Tracker has been updated as part of the 1.6 release. The new model is expected to have a slight improvement on detection range as well as more accurate definition of the skeleton key points. This change in model should have little to no impact in your current analytics processing speeds

UI Language Selection and Translation

The VCAserver UI now supports language selection. For the 1.6 release supported languages now include English, Polish and Spanish. As part of this work we have developed a fast UI translation pipeline which allows support of new languages very quickly.

Licensing

In 1.6.0 we introduce a major rewrite of our licensing libraries. These improve resilience in our licensing approaches and lay ground work for future licensing features. As part of this reworking of the licensing libraries, the API for assigning a license to a channel has been revised. At this stage this is a change in the API and the VCAserver UI will be unaffected. When performing an upgrade with an existing configuration all licenses will be removed from assigned channels. Please ensure that a backup of configuration is done

before upgrade and then reimported.

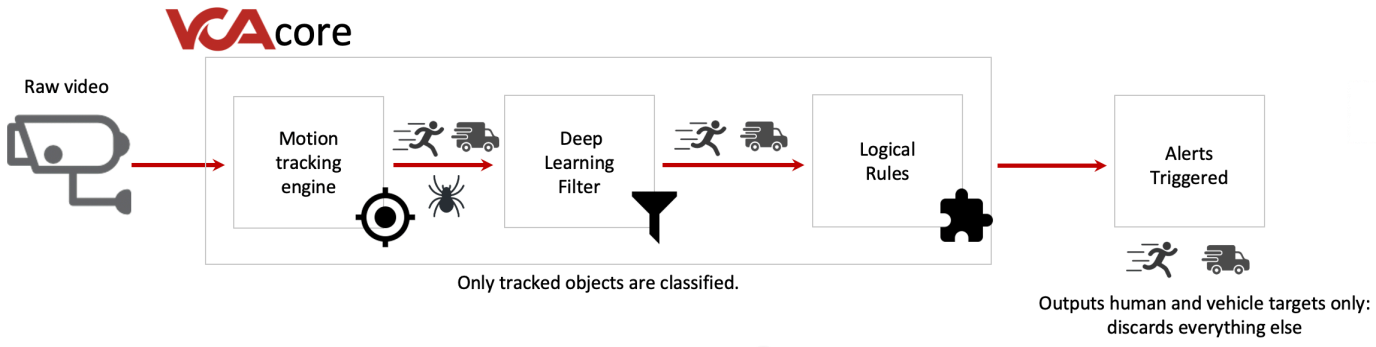
Please note: This change includes breaking changes to the VCAcore API, please see Known Issues for a full breakdown of the changes, as well and the VCAcore Integration Documents for the changes.

Deep Learning Filter v2

The Deep Learning Filter has gone through a major revision with this release.

A new model is now driving the object classification, trained with a new security focused image dataset composing of CCTV images including infrared and low light samples.

As well as a new model, the implementation of how the DLF works have been revised. Any object that the motion tracker detects will now be instantly classified and reclassified periodically whilst it remain in the field of view. This differs from only objects that trigger specific rules being classified by the model.



This change simplifies the VCAcore rules, removing the need for DLpresence and Deep Learning Filter rules all together. Now a Presence or Dwell rule combined with the standard Object filter rule will emulate the same behaviour. This brings everything in line with the rest of VCAcore's trackers, such as the Deep Learning Object Tracker, which would use the exact same rule configuration to do the same thing.

The new DLF model and inference approach is likely to result in a bigger computational overhead when compared to the original DLF. On hardware running GPU acceleration we don't believe the impact will be noticeable. However, we would expect to see a 20%-30% decrease is channel capacity when running the DLF on CPU only hardware when compared with the original DLF.

Please note: This change includes breaking changes to the VCAcore API, please see Known Issues for a full breakdown of the changes, as well and the VCAcore Integration Documents for the changes.

HTTPs Support for Actions

The HTTP action now supports HTTPs endpoints, the encryption of the HTTP message according to TLS and SSL standards as well as the ability to verify a HTTPs endpoint certificate before sending. This allows VCAcore to send HTTP requests to nearly any valid endpoint, increasing flexibility and opening the door to easier cloud integrations with VCAserver events.


Type:
Http
Name:
HTTPs Action
URI:
https://api.genericvms.com/create-event&event-name={{name}}
Select a token to add it to the template string
Port:
80
Headers:
None
Line Endings: Unknown
Select a token to add it to the template string
Body:
Custom
Event Name: {{name}}
Event Type: {{type.string}}
Event Time: {{start.iso8601}}
Line Endings: Unix (LF)
Select a token to add it to the template string
Method:
GET
Enable Authentication:
Username:
admin
Password:
Send Snapshots:
Snapshot Quality:
Average
Interval between snapshots:
500
ms
Number of snapshots before event:
4
Number of snapshots after event:
4
Multipart request name:
vca
Verify Certificate:
Encryption:
SSLv3
Always Trigger:
Sources:
Add Source +
Test

Video Status Display

To help identify optimal settings and provide more information to the user, a Video Status Display has been added. This is a UI overlay, that presents realtime information on the channel view currently open.

Statistics included in this overlay are:

- Input video resolution, frame rate and codec.
- Length of time taken to run the analytics (e.g. the trackers and rules configured).
- The hardware used to decode the image (either `CPU`, `Vappi`, `NVIDIA`)

This information has been added to help users ensure that input video streams are optimised for analytics (and are in expected format and resolution). Ensure that the hardware is able to keep up with image decoding demand and that the analytics is processing at desired frame rate.

Bug Fixes

This release contains fixes for the following issues:

- Fixed issues with licensing when connected to remote licensing server
- Performance improvements in SSE stream
- Fixed issue with HTTP/TCP/EMail action templates being reset on page reload
- Added support for multiple clients connecting to UI and updates being properly synchronised
- Fixed issue with Zone metadata missing from certain rules
- Fixed issue running VCAserver on Windows Server
- Fixed counter values resetting when channel restarts
- Fixed issue causing snapshots to be missing from HTTP and Email actions
- Fixed memory leak when calling VcaCoreAppChannelSetVideoFormats
- Fixed issue when more than 64 separate licenses were on a single license server
- Fixed erroneous warnings when attaching Direction rules to zones
- Fixed Object Tracker's learning scene time being longer than expected in automatic mode
- Fixed Object Tracker's learning scene time and area threshold configuration not being applied correctly in manual mode

- Fixed issue where metadata from DL trackers could be delayed behind video

Historic Fixes

Historic fixes record all fixes made to VCAcore regardless of platform

v1.5.8

- Fixed UI issue with SDK where license assigned to channel couldn't be changed
- Fixed crash with null metadata callback in SDK
- Fixed warnings from gstreamer library not appearing in logs
- Fixed issue with channels being stuck with 'Decreasing timestamp' error
- Fixed long delay in restarting channels when an error occurs
- Fixed issue where connecting to RTSP server would fail for certain channels after running for a long time
- Fixed performance issues when using SSE metadata streams
- Fixed rare deadlock issue while using SSE metadata streams
- Include zone and object metadata from input rule in Counter events
- Added new scene change detection mode (Adaptive), currently only available in the API
- Improved the stability and colour accuracy of the colour signature algorithm
- Improved the DLOT's stationary object detection

v1.5.7

- Fixed issue where occasionally incorrect number of licenses would be checked out when connecting to remote license server
- Fixed issue where opening the UI could cause disconnect from license server
- Changed minimum interval for DLPresence rule to zero in order to support previous behaviour
- Fixed delay in HTTP action authentication

v1.5.6

- Fixed crash when calling VcaMediaTimestampFromIso8601 in Windows SDK
- Fixed service intermittently failing to exit when there is an open connection to RTSP server
- Fixed remote license server license usage not being updated correctly when client service does 'hybrid shutdown' in Windows

v1.5.5

- Fixed issue where HTTP actions were being queued due request response times
- Switched the Web Server Backed to allow for increased simultaneous connections to the SSE streams
- Fixed heap-overflow issue in logging library
- Fixed stack overflow issue in metadata library
- Fixed RTSP server not sending RTCP messages
- Fixed intermittent crashing when using metadata SSE streams
- Fixed crash when using certain files with file sources
- Fixed issues with RTSP URL input in UI
- Improved error reporting/handling for RTSP source
- Improved stationary object detection for DLOT and DLPT
- Fixed tracking engine status metadata being serialized incorrectly

- Fixed issue where objects sometimes could not be seen flashing red in video preview BIA for events that last single frame
- Fixed intermittent crashing when stopping application using recovery service while RTSP server is in use

v1.5.4

- Fixed exception when calling VcaCoreAppChannelRemove on channels with observables assigned to them
- Fixed Not rule using system time instead of frame metadata time for generated events
- Fixed intermittent crashes running SDK example on Windows
- Fixed issue with web server not cleaning up SSE streams when connection closed by client

v1.5.3

- Allow adding HTTP + Schedule sources in SDK UI
- Remove associated zones + rules from configuration when VcaCoreAppChannelRemove is called in SDK
- Fix intermittent crashing when requesting Onvif events
- Automatically unpause video preview when navigating away from Calibration view in UI

v1.5.2

- Fixed format of VCAcore timestamps

v1.5.1

- Fixed issue preventing Windows service from stopping
- Fixed issue where connecting to remote license daemon would fail when starting service
- Fixes issue in BIA displaying faces filled up
- Source file dropdown now in alphabetical order
- Fixed issue with channel snapshots not updating when HTTP action slow
- Fixed buffer overflow in licensing library
- Fixed issue where licenses were invalidated after a Windows feature update
- Removed UI redirect
- Fixed intermittent failures in restarting service
- Added license storage migration (Windows)

v1.5.0

- Fixed crash in channel removal
- Moved to static ffmpeg ThreadPoolTempl
- Fixed broken ZOI disappear logic with multiple zones
- Reduced thread usage per channel
- Added internal frame rate monitor algorithm
- Cache available GPU devices
- Increases max threads for gstreamer RTSP server thread pool
- Fix disconnection/reconnection feedback loop in import when connected to remote daemon
- Corrected timestamps shown in logs
- Fixed crash on Sundays with Schedule source
- Fixed channel pipeline getting stuck/showing tamper detection messages when invalid timestamps

received from input
- Fixed page jumping back to settings home page when Counter is clicked on video overlay
- Fixed incorrect names shown for sources in SourceFilter list
- Improved error handling when reporting GPU stats - supports reporting values that are available when device doesn't support all the statistics
- Fixed issue where loss of signal/tamper detection options were not shown in UI with DL people tracker selected
- Improved reliability/stability of local licensing
- Remove expired licenses from the dropdown list in the UI
- Fix deadlock seen when performing a reset with a TCP action in the configuration
- Fix crashes seen on import
- Metadata support for end events + ability to disable duplicate events for detecting when an event has finished

v1.4.3

- Fixed issue where licenses were invalidated due to Windows Updates
- Fixed issue where licenses were sometimes invalidated when upgrading from pre-1.4.x versions

v1.4.2

- Reduced unnecessary thread usage
- Fixed arrows in LR graph being invisible in custom UI themes with dark backgrounds
- Fixed issue where unwanted scrollbars would appear in UI for colour filter rule in certain browsers
- Fixed license platform mismatch issue due to problem with VM detection on Windows
- Fixed issue where the metadata for the wrong zone was attached to Direction events
- Fixed issue with max open file descriptors limit for Linux service
- Fixed bottleneck in RTSP server with many simultaneous connections

v1.4.1

- Resolved installer issue relating to migration on Ubuntu

v1.4.0

- Added a Warning message in logs when not enough snapshots are available to fufill an action’s settings
- Corrected Issue with the 'Delete Licence' message box not appearing in expected location when large number of licenses are present
- Removed the redundant Sureview template from HTTP message templates
- Fixed issue where it was not possible to enable calibration or change settings
- Fixed intermittent crashes when resetting to default configuration/importing a configuration
- Fixed issues with the pre, post and current snapshots not being in correct chronological order in some cases
- Fixed UI warning "Expected array for items, found 000000" caused by template
- VCAcore Service on Windows is now set to Automatic and starts after the install is complete
- Corrected issue where the month field in the log file names was one month ahead
- Fixed issue where deleting a channel with multiple direction rules on a single zone would fail
- Fixed start times of events from Filter observables
- Fixed issue resulting in colour artifacts within Jpeg snapshots

- SSE metadata streams now support filter variables to define either event or object only metadata messages.
- Fixed issue where Stopped and Tailgating rules would generate duplicate events
- Fixed issue when counter events were used as a source to a action snapshots would not be sent
- Corrected issue where Stopped events were not triggering actions
- Added additional error logging for Actions
- Fixed issue where zones were not being removed from the configuration when a channel was deleted
- VCAcore video pipeline is now capped at 15fps, additional frames will be received and discarded
- Fixed issue with Tensorflow that was resulting in a CUDNN_STATUS_ALLOC_FAILED error
- Added missing zone data to Dwell, Direction and Continuously events
- The `vca.meta.data.object.History` metadata type available in the SSE and RTSP metadata streams has had `vca.meta.data.Object` data removed **(breaking change)**
- The `dl_filter` object for a channel has had the `enabled` property removed. The enabled state of the DL Filter is now handled internally. This impacts the VCAsdk and REST API **(breaking change)**

v1.3.7

- Fixed issue where RTSP server would generate incorrect timestamps for input video streams with unknown frame rates

v1.3.6

- Added customisable Multipart request name to the HTTP request structure

v1.3.5

- Fix memory leak in allocation of output tensors, and tensorflow model
- VCAserver (Ubuntu and Windows) now have only a single installer
- Fix crash when deleting observables
- Corrected an issue in subscribing to ONVIF Events
- Add missing rule tokens from Counter, Line Counter and Tailgating rules
- Corrected an issue where the DLFilter button on the channel page disappears after a refresh
- Add support for DLPresence license
- To support actions templating, the `templates` property has been removed from the configuration. This impacts the VCAsdk and REST API **(breaking change)**

v1.3.4

- Fix SDK crash when disabling app channel after removing an observable
- Fixed inconsistencies when using CSS themeing

v1.3.3

- Fixed CSS themeing issues
- Hide irrelevant settings in Web UI when using SDK

v1.3.2

- Fixed intermittent issue with sources being removed from actions on bridge restart
- Calibration for a channel is now automatically enabled when rules requiring it are added in the UI
- Time properties of rules now use consistent units in UI

V1.3.1

- No fixes included as part of this release

v1.3.0

- Due to unsupported integration the Milestone action and source have been removed. Integration support for Milestone can be found on the VCA Technology website.

v1.2.7

- Fixed issue when loading a configuration with certain rules (linecounter, etc.) in the SDK which preventing the loaded rules from working.

v1.2.6

- Fixed source timing issue preventing the addition of a file sources

v1.2.5

- Fixed crash in the Onvif Discovery service preventing VCAcore from starting when DHCP is absent

v1.2.4

- Fixed issue with line counter not generating events after VCAcore service is started, until the configuration is changed.

v1.2.3

- Fixed high CPU/RAM usage issue with certain frame rates
- (SDK) When the user channels feature is disabled in the SDK, channels are now sorted by host_id in UI
- Reduced size of VCAcore install packages
- Removed GPU additions package for VCAserver (Linux)
- Selection of GPU or CPU use for DL filter now handled at runtime

v1.2.2

- Corrected issue where the DL-Filter triggered the source rule as well as itself.
- (SDK) Added the ability to make the configuration storage volatile.
- (SDK) Fixed a bug where BGR frames were not correctly handled.
- (SDK) Fixed an issue where creating a service using the SDK inside a GUI application created a new console window for 'vca-daemon-cli'.
- (SDK) Fixed an issue where the user of the SDK on Windows couldn't place the SDK and associated libraries into a subdirectory called 'vca'.
- (SDK) Fixed a crash caused by creating app channels from multiple threads.
- (SDK) Document the thread-safety aspects of the SDK.

- (SDK) Added additional example code.

v1.2.1

- Fixed an issue where the Previous LR didn't work correctly with per-target mode switched off
- Fixed an issue where some LRs would stop working when VCAcore is restarted depending on the order that they are added
- The interval source now correctly substitutes the name property in action templates
- Fixed issue where the values were substituted twice for line counter template tokens where two way detection was enabled

v1.2.0

- Fixed an issue where rtsp streams would periodically restart when using certain cameras with metadata streams.
- Improved rtsp server performance on Bridge (using hardware encoding).
- Fixed issue where changes to the web port on VCAbridge were not persisted between restarts.

v1.1.3

- Improved hardware encoding/decoding performance on VCAbridge
- Resolved issues where static ip settings are lost on reboot
- Resolved issues with fallback ip address remaining after DHCP is restored

v1.1.2

- The ONVIF discovery and events service has been restored
- Fixed recurrent Learning Scene issue in VCAserver (Windows)
- Fixed issue where VCAcount and VCApresence licences were not being correctly handled in VCAserver
- Fixed issue when calibrating a direction rule which resulted in the UI focus falling to the docked zone view

v1.1.1

- Corrected an issue where it was possible to add more than two line counters to a single zone (line).
- Corrected an issue where when returning back to view a channel stream it appeared blacked out.
- Connection to VCAcore RTSP server is now faster and more stable.
- Fixed direction widget not showing when adding new direction rule.
- The VCAcore UI now uses single system stats SSE stream instead of separate cpu, memory and uptime.
- Zones are converted from polys to lines when a line counter is attached.
- Added line counter properties to LR graph.
- Line counter properties are now synced across all other line counters attached to the same zone.
- Fixed direction property name mismatch.
- Fixed incorrect direction being shown when switching between zones.
- Fixed zone not being updated on line counters.
- Fixed favicon being constantly requested by the UI.
- Fixed VCA filter rules being deleted when switching between channels.
- Only display direction widget for current channel
- Fixed 'Delete All' zones button.
- Added separate action for delete all that checks if any zone is in use

- vca-observable: Replaced incorrect use of this.pop with splice and fixed incorrect variable name.
- Line counter properties are now hidden when zone is null.
- Fixed bug causing the wrong zone to be deleted.
- Split the line counter observable into 2 separate ones for A and B
- General network improvements around falling back to 192.168.10.10 when DHCP fails.
- IPAdmin tool will now report the current IP address when the VCAbridge is using DHCP or when a static IP address has been set. Please see known issue for behaviour when on the fallback IP address 192.168.10.10.
- Removed speed-preset console warning.
- Fixed events not being generated when LR direction is attached to a line.
- Fixed bug where events are generated for both line counter and directions even though only one is selected.
- Fix crash caused by divide by zero.
- Fixed bug where some snapshots are not added to an email action.
- Fixed a bug where having multiple actions with templates caused a crash.
- Fixed headers when sending multipart HTTP requests

v1.1.0

- The GStreamer backend has been upgraded to v1.16
- HLS settings have been tweaked to improve stability
- Corrected an issue where the Sureview template in the HTTP / Email action was not creating the correct XML template.

v1.0.3

- Corrected an issue where the counting line calibration value was not persisted in the configuration.
- Corrected an issue where the arm/disarm state of VCAcore was not persisted during a reboot.

v1.0.2

- Corrected issue where the DL-filter was appearing as available when the model was not installed.
- Resolved issue where memory usage would climb with the use of the DL-filter.
- Corrected issue with local video playback which was causing ""networkError: manifestLoadError" / "networkError: levelLoadError" when video stream restarts.
- Reduced channels page errors: "Service Unavailable: Internal data stream error" or "Service Unavailable: Unhandled error".

v1.0.1

- No fixes included as part of this release

Known Issues

Outlined below are known issues, that are under consideration by the development team.

- When automatically migrating from a pre v1.4.0 of VCAcore the web port of the UI and default RTSP port will be reset to `8080` and `8554` respectively, if a change is required this will need to be made manually. Alternatively, exporting a pre v1.4.0 configuration and manually importing that config will maintain any configured webUI or RTSP port.

- With the release of v1.4.0 the `vca.meta.data.object.History` metadata type available in the SSE and RTSP metadata streams has had `vca.meta.data.Object` data removed due to duplication and to reduce the metadata size.
- With the release of v1.4.0 there has been a **breaking change** to the VCAsdk and REST API. The `dl_filter` object for a channel has had the `enabled` property removed. The enabled state of the DL Filter is now handled internally.
- There is a known issue which leads to very high initialisation times with the current TensorRT version utilised within our Windows builds. This is apparently fixed in the next release but is not available for integration at this time. As soon as possible this new version will be integrated with VCAcore.
- When automatically migrating from a pre v1.5.7 of VCAcore, DLpresence rules will have a default interval of 1 second.
- With the release of v1.5.8 there has been a **breaking change** to the metadata format for the Deep Learning Presence and Tamper Event. The event `type` string has been changed from `Presence` to `presence` and `Tamper` to `tamper` respectively. This change will be visible in both the `{{event.string}}` token as well as the `Event` metadata where applicable.
- With the release of v1.6.0 there has been some **breaking changes** to the VCAsdk and REST API. A channel's `dl_filter` property, and any associated sub properties, has been removed and replaced with `dl_classifier` which has a single property (`enabled`) which when set to `true` activates the Deep Learning Filter for that channel. Additionally, the observables with `typename` `vca.observable.DLPresence`, and `vca.observable.DeepLearningFilter` have been removed. To replicate the same behaviour, turn on the DLF using the `dl_classifier` `enabled` property, and use a `vca.observable.Presence` combined with a `vca.observable.ObjectFilter`. This is the same configuration as all other filtering use cases (DL or otherwise). Additionally, a channel's `license` property is being replaced with the `licenses` property. This will now contain a list of license codes. A license code defines a license type to assign to the channel e.g. Pro, PresenceAI. The proposed change supports the use of more than one license type on a single channel, supporting the addition of 'add-on' licenses which will enable single or small subsets of features that may not be available in another license type. Lastly, the process to add a pack of licenses to VCAcore has changed slightly. The license string (provided by VCA against a given hardware GUID) is passed directly to `/api/licenses/vca/activate`.
- With the release of v1.6.0 there has been a **breaking change** to the metadata format for the Deep Learning People Tracker's Body Part metadata. Metadata with a `typename` of `vca.meta.data.pose.BodyPart` has had the `score` variable renamed to `confidence` in line with the rest of the deep learning metadata provided by VCAcore.
- With the release of v1.6.0 BETA and the changes to licensing, any upgrade of a VCAcore system will remove all assigned licenses from their channels. An import step will be introduced with the full release which will address this issue.

Release History

Below is the release history from v1.0.1 covering the major and minor features released regardless of platform.

v1.5.5, v1.5.6, v1.5.7, v1.5.8

- Object Filter for Deep Learning Object Tracker
- Dwell functionaility added to the DLpresence Rule
- Require Initial Movement for Deep Learning Object Tracker
- Torso and Legs Colour Signature Metadata
- Added Channel Name Token

v1.5.1, 1.5.2, 1.5.3, 1.5.4

- No features included as part of these releases.

v1.5.0

- Deep Learning Object Tracker
- License Server
- Counter Thresholds
- Logical NOT Rule
- New Deep Learning backend & Multi GPU Support
- Escape Character Support

v1.4.1, 1.4.2, 1.4.3

- No features included as part of these releases.

v1.4.0

- Deep Learning People Tracker
- Tracker Selection
- Object Tracker Sensitivity
- Blobmap Annotations
- System Resource Monitoring
- Schedule Source
- HTTP source
- Other Source Filter
- VCAcore Configuration Represented as a Single File
- Automatic Migration of Configuration when Upgrading
- New Licenses

v1.3.6, 1.3.7

- No features included as part of these releases.

v1.3.5

- Action Templates

v1.3.3, v1.3.4

- No features included as part of these releases.

v1.3.2

- Deep Learning Presence Rule

v1.3.1

- Improved DL-Filter model

V1.3.0

- Dwell Rule
- Colour Filter
- User Interface Optimisations
- Added Width, Height and IP Address Tokens
- Metadata Customisation Options
- Digest Authentication support in HTTP Action
- User Interface Customisation
- Metadata RTSP Stream
- VCAserver Recovery Service

v1.2.3

- JPEG Video Preview

v1.2.1, v1.2.2

- No features included as part of these releases.

v1.2.0

- System Logging
- Licence Selection

v1.1.2, v1.1.3

- No features included as part of these releases.

v1.1.1

- CPU and Memory Information for VCAbridge
- Filters in Logical Rule

v1.1.0

- VCAsdk released
- ONVIF Discovery and Events Support
- Additional Logical Rules Support
- Arm / Disarm Actions and Sources

- Deep Learning Filter Options
- Verifier HTTP Action Template

v1.0.3

- No features included as part of this release.

v1.0.2

- VCAserver for Linux

v1.0.1

- VCAserver for Windows
- VCAserver as a Windows Service
- Logical Rules Engine and User Interface
- Deep-Learning Filter (DL Filter)
- HTTP and RTSP port Configuration
- Removed / Abandoned Object Observable
- Added Snapshots to an HTTP Action

Deep Learning Model History

Below is the release history from v1.5.8 covering the deep learning models used in VCAcore

v1.6.0

Algorithm	Version	Comments
DLOT	v3.0.0	Iterative release
DLPT	v2.0.0	New model, `neck` key point removed from metadata
DLF	v2.7.4	New model and post processing
Fall Detection	v1.0.0	First release

v1.5.8

Algorithm	Version	Comments
DLOT	v3.0.0	Iterative release
DLPT	v1.0.0	
DLF	v1.1.0	

For support queries and documentation please see VCA Technology support page.

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