Re: i3Ai Service v7.0.2.32 Release Notice   November 1, 2019

To all of our customers and partners;

This bulletin is the official notice of the **i3Ai Service v7.0.2.32**.
Released in conjunction with SRX-Pro Service (Pro Setup) **v7.0.2.65** and VPC **v7.0.2.65**.

The new software installation package is now available for download from the i3 website:
http://i3international.com/support/download.

i3Ai Software Overview

i3Ai Software has been designed as a standalone platform capable of applying i3's Artificial Intelligence engine to analyze video from i3 or third-party cameras to deliver actionable alerts based on the type of object or behavior detected. i3's Ai solution replaces Video Analytics features used in SRX-Pro v.3.0-6.0. In order to continue utilizing VA functionality in SRX-Pro v7, users must instal i3Ai Service along with SRX-Pro v7 Service, on the same NVR, or on separate systems located on the same LAN network.

One of the main benefits of i3Ai solution is the ability to continually improve detection accuracy based on customer's unique requirements. i3Ai's detection algorithm is based on a CNN (Convolutional Neural Network) technique, which allows for increased accuracy through ongoing machine learning. The i3Ai detection algorithm will remain in a continual state of improvement and will be re-released with increased detection accuracy, on a regular basis. i3Ai algorithm updates are also referred to as CNN model updates.

i3Ai Service combines the legacy Video Analytics features (lower accuracy), which can still be utilized by existing customers with valid VA licenses (must be converted to a new format by i3 Tech Support Team). New i3Ai license must be purchased to take advantage of i3's Ai object-type based detection, which has higher overall accuracy.

i3Ai Service suite consists of the following components:
- A. **i3Ai Windows Service:** background Windows process handling critical i3Ai tasks, such as video analysis using i3Ai algorithm, alarm and event generation, and other critical i3Ai processes.
- B. **i3Ai Web Service:** background Windows process that allows the users to access and make changes to the i3Ai settings via Web Browser as well as monitor detection activity in real time. Web service is also responsible for storing detection, door count, drive-through and other Ai results in i3Ai's SSQLite database.
  i3Ai Web Service connects and control local i3Ai Service through TCP/IP 127.0.0.1 and default control port **17236**.
  Both (A) and (B) must be running to access i3Ai settings, but only (A) must be running to ensure uninterrupted i3Ai detection.
- C. **PAC Converter:** Utility that passes i3Ai alert information to CMS Web.

Hardware Requirements:
i3Ai Service requires **GPU** (Graphic Processing Unit) to work efficiently. For customer convenience, i3 offers a line of Ai-ready NVR servers with built-in GTX graphics card (GPU) that are capable of combining SRX-Pro v7 Service with i3Ai Service on a single system.

Release History:

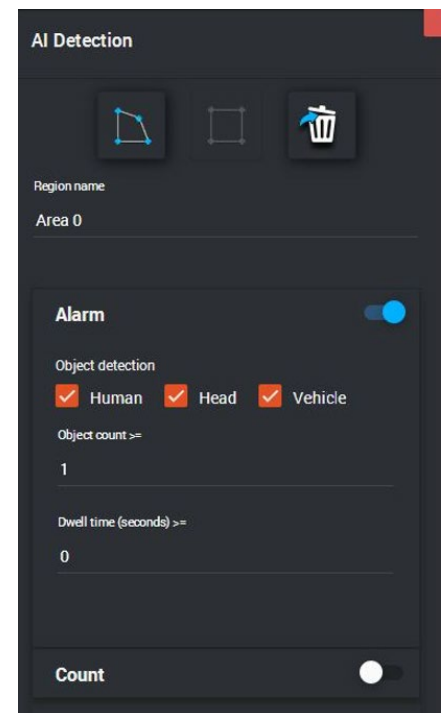**i3VA v2.0.1.0 (Internal Release, Beta, EVALUATION PURPOSES ONLY, October 31, 2017)**

New Features:

- Support IP camera auto discovery on a local network
- Support Windows and Web services
- Support Web setup and live mode
- Support Ai detection for 22 different types of objects in any view angle and size.
  - Raw data of CNN detection is saved to i3Ai database regardless of Alarm or Count settings. The following raw i3Ai data is written to the database:
    - Channel ID and Timestamp
    - Object Type (e.g. Person, Head, Face, Automobile)
    - Object Location in relation to the video frame
    - Object UID (reserved for tracking, future development). Tracked object has the same Object UID.
  - Other i3 applications are able to request raw i3Ai data for additional analysis (E.g. SRX-Pro, CMS, Alert Centre, etc.)
  - CNN data can also be uploaded to AWS for the use by CMS Web and additional business and security analytics.
- Support legacy VA features using legacy VA algorithm: Object Tracking (combines legacy Enters Area, Idle in Area and Region Count functions), Door Count, and Drive Through
- Support saving data locally in SQLite format
- Support iVA license format
- Support integration with i3's CMS (Alarm only). PAC Converter passes the i3Ai data to CMS Web Server.

i3Ai Setup

- **Detection area**
  Use Polygon or Rectangle tool to draw detection area (region) on selected camera. Customize Region name as desired.

- **Alarm**
  When alarm is enabled, i3Ai analyzes CNN raw data for alarm conditions. Once alarm event is detected, PAC Converter sends the alarm event to CMS Web Server.

  - Object Type

  Select preferred object type(s). Alarm events will be generated only for object types selected.

  - Object Number

  Object Number functions like "Enters Area" in SRX-Pro v6 Video Analytics. The alarm event is generated only if the number of objects detected exceeds or is equal to set Object count. Object count is combined for all selected object types. Example, if the object type is set to "human" and "vehicle",

AI Detection

Region name
Area 0

Alarm

Object detection
☑ Human   ☑ Head   ☑ Vehicle

Object count >=
1

Dwell time (seconds) >=
0

Count

and the object count is set to 3, alarm event will be created if 1 vehicle and 2 humans are detected in the detection area.

- o Dwell time (seconds)

When dwell time setting is higher than 1 second, Alarm functions like "Idle in Area" in SRX-Pro v6 Video Analytics. When dwell time is set to 0-1 seconds, Alarm functions like "Enters Area" in SRX-Pro v6 Video Analytics.

All conditions (Object Type, Count and Dwell Time) must be met to trigger an alarm event. Alarm message will contain object type, count and dwell time information.

- **Count**

When count is enabled, other application can request Count data using i3Ai API. Object Type setting is ignored for the Count feature. i3Ai records all detected object types into the database, and API can filter out count for specific object type, as required.

i3Ai Live Mode

Note: Since i3Ai Web GUI is unable to display video from i3Ai Web Service nor from camera directly (RTSP streaming requires ActiveX component), i3Ai uses a series of snapshots to simulate live video (@1 FPS).

i3VA v2.0.1.33 (Internal Release, Beta, EVALUATION PURPOSES ONLY, June 1, 2018)

New features:

- Merge Ai and (legacy) VA features
- VA features: Support Move in Direction function
- Support UPnP server
- Support UIO8 for Alarm Output generation. i3Ai discovers all available UIO8 devices on the LAN. User can add UIO8 to link UIO8 Alarm Outputs to the detected i3Ai or VA events.
  Note: UIO8 devices may not be shared between multiple programs/services. E.g. Once UIO8 is assigned to i3Ai Service, it cannot be used by SRX-Pro Service.
- Support Schedule settings for Ai and VA functions
- Support Server information setup page
- Integrate with SRX-Pro v7. SRX-Pro v7 can detect an i3Ai event for the same camera and trigger one or more alarm actions: send out an email notification, play custom *.mp3 or *.wav sound file, and/or activate an Alarm output (via UIO8).
- Support new license format: i3Ai license (Ai and VA fields). Each license allows activating one Ai or VA feature per channel. Ai and VA functionality may not be combined on the same channel. Each feature requires one license, same as in SRX-Pro v6.

Improvements:
- New GUI for System setup page

i3VA v2.0.2.1 (Interim Release, EVALUATION PURPOSES ONLY, July 6, 2018)

Improvements:
- Scale image resolution based on Ai web request
- Change IP Camera discovery timer to 5 minutes. If camera disappears after 30 minutes, it is removed from discovered list.
- Support UIO8 permission levels
- Remove 'head' category out of default categories
- Align System page to the left
- Change Save and Close buttons in Camera setup dialog

i3Ai v7.0.1.0 (Internal Release, Beta, EVALUATION PURPOSES ONLY, October 18, 2018)

New features:
- Support Auto logout
- Support Auto update
- Support Ai Traffic & dwell (**Note:** *Support for Head detection only*)
- Support Ai Door Count (**Note:** *Support for Head detection only*)

- Support Request license, follow SRX-Pro logic and design. Customers can request license upgrade through an email form. Internet connection required.
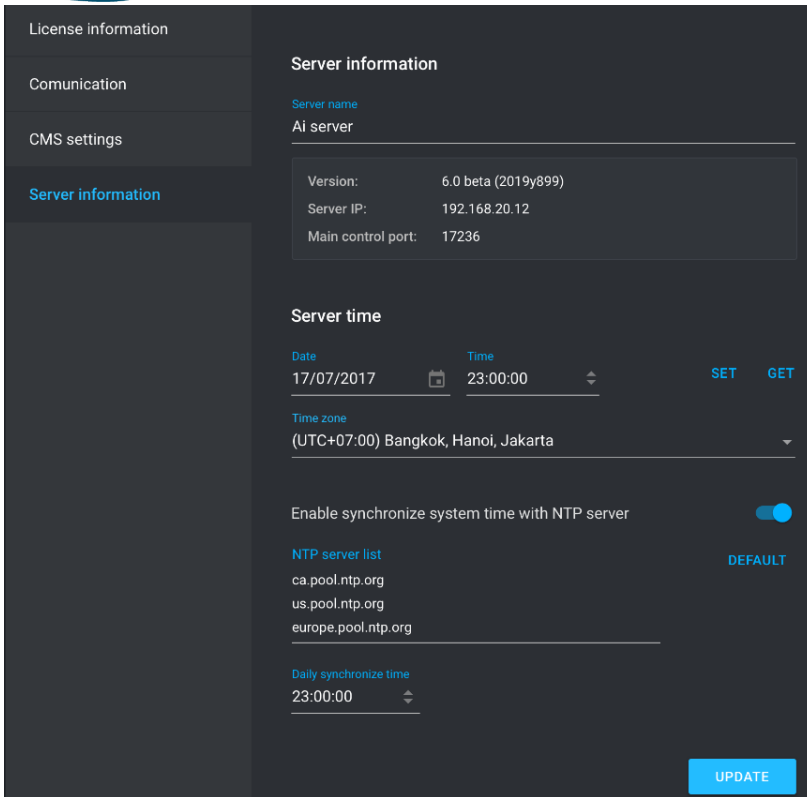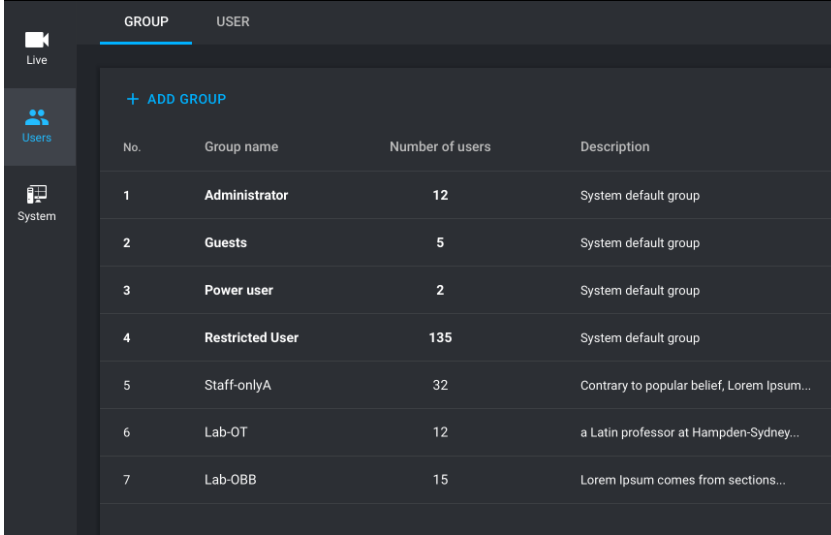

- Support Main/sub stream switching

Improvements:
- Change database size recover rule
- Apply new style for Communication setup page
- Support drag/drop channel on Live mode
- Improve Server information setup page. Add NTP server list.

- Add User Management module, follow SRX-Pro design.

- Remove Session expiry setting
- Update GUI strings
- Improve Door count and Region count drawing

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INTELLIGENT VIDEO DRIVING PROFIT

- Support clip playback and alarm event upload to Alert Center

i3Ai v7.0.2.0 (Interim Release, December 20, 2018)

New features:
- Support more object types for Traffic & Dwell feature. Tracking data is saved to DB for supported object types: Face, Head, Person, Vehicle.
  In VPC, support Ai Search GUI to filter video recording based on Ai-tracked objects.
- New User Management GUI
- Support UIO8 setup settings

- Support max FPS setting setup in Ai

Improvements:
- Improve Area Count accuracy
- Improve Traffic & Dwell accuracy for the car oil changer / body shop application
- Support parameter descriptions
- Improve Web GUI performance in IE
- Apply all default values to display on GUI by API from server

i3Ai v7.0.2.5 (First Production Release, February 1, 2019)

New features:
- Combine Ai and VA license into 1 field

Improvements:
- Re-name and add i3Ai shortcut to Start menu
- Change area name's drawing position
- Optimize area title overlap on display

i3Ai v7.0.2.16 (Interim Release, June 14, 2019)

New features:
- Support Show/Hide area drawing on live display
- Support 2 license fields for i3Ai

- Support maximum 64 channels (Ai + VA)
- Increase maximum Traffic & Dwell area number from 3 to 6

Improvements:
- Optimize database recycling
- Integrate CNN model p23c-060119 for increased accuracy

i3Ai v7.0.2.27 (Interim Release, August 22, 2019)

Improvements:
- Updated license agreement
- Support old license format which contains 1 Ai field only

Fixed issues:
- High CPU when enable VA with camera turn on Corridor mode
- Missing xvidcore.dll when launching i3Ai
- High memory when VACCUM operation happened each day for database, especially for big size database
- Image stretch when corridor on
- Cannot load web page correctly after upgrading from 7.0.2.5

i3Ai v7.0.2.32 (This Release, October 23, 2019)

New features:
- Support all-in-one license

Improvements:
- Updated license agreement
- Notify user when license remaining days <=30 days
- Display server name and license remaining days on top bar
- Improve license security

Limitations:
- English-language support only

i3Ai v7.0 Compatibility Table.
Note: For i3 application compatibility, refer to i3's Software Compatibility Chart technical bulletin on Media Library web page. Search **Technical Bulletins** > **Software** subfolder for the latest revision.

i3 Application / Device	Compatibility
SRX-Pro	v.7.0.2.X
UIO8	UIO8 Firmware v2.3.0 to v2.3.6
CMS Web	CMS v5.7 or higher
PACDM	PACDM v7.22.2.0 PAC Converter v3.1.2.0
VPC	VPC v7.0.2.65 or higher

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