

WHITE PAPER

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. International Standards for Video Analytics

Video Analytics is a new field and hence it is difficult for a user to understand the difference between products from different suppliers. For instance, hundreds of suppliers may claim that they can find an abandoned bag but virtually all can do this only in empty scenes. The real challenge is to do it in a crowd when the bag has been obscured by passers-by for half the time.

Some can detect after at most 30 seconds but not if has been there for ten minutes.

And how many can differentiate the bag when it is ultimately found from a sleeping child?

iOmniscient can do all this. And because it has the international patents for this capability, no one else can.

The challenge is that this is a new field. Many of the most advanced capabilities are patented and hence while many players can do the simple things, only those who were first in the field and had the vision to patent their advances can do the most advanced things.

The Challenge for Standards

Standards are useful where the technology has stabilized and there are many players in the field essentially offering a commodity. The challenge for all standards in the video analytics industry is that the technology is evolving and improving rapidly. It takes years to agree on a standard internationally and these get undermined when new technologies make the standard obsolete sometimes even before the standard is published.

Standards for Behaviour Analytics

There were attempts a decade ago by the UK Home Office to create a standard for behaviour analytics called iLIDS. This focussed purely on sterile environments (because that is what most people could handle). This standard did not address the requirements of most large organizations to cope with aberrant behaviour in crowded environments (something iOmniscient has international patents on).

To address this gap iOmniscient defined an IQ Rating system that specified the level of intelligence required for coping with different types of situations. It used this to classify its own products (as it offers both simple and advanced capabilities). It is a very simple measure for measuring intelligence and many consultants have adopted this rating system to differentiate between suppliers.

Recently an ISO committee was set up to develop an international standard for Behaviour Analytics. The committee has approached iOmniscient to adopt aspects of the iQ Rating system in its new standard.

Face Recognition Standards

As more players entered the Face Recognition space, NIST, a US based testing service, developed some tests to measure the accuracy and false alarm rates for the various systems. As virtually all Face Recognition systems are designed for access control type applications where one has a fairly controlled environment, relatively cooperative individuals and high resolution images, this is the environment that the NIST test was designed for. Over time they expanded the testing to include an “in the Wild” test where the individuals were moving but the test still required single high resolution images and a high resolution video.

Today most participants can only recognize people with 60 to 100 pixels between the eyes so this is what the NIST test is set up to address. A few companies can recognize (with reduced accuracy) down to 45 pixels between the eyes. So this is the lowest level at which the NIST tests operate.

iOmniscient’s Face Recognition can recognize with images that have 22 pixels between the eyes and down to 12 pixels with slightly reduced accuracy. However, NIST does not test at that level as it cannot build a test where there is only a single participant - because iOmniscient has international patents for achieving this.

ONVIF Interfacing Standards

The one area where there are useful standards is in the area of video output from cameras and other systems. The ONVIF standard specifies the output format for video streams and virtually all the major camera suppliers now subscribe to it.

Unfortunately, many Video Management System (VMS) suppliers still do not store or forward their video streams using the ONVIF standard as VMS systems are now commodities and maintaining a proprietary interface is the only way they have of constraining competition.

Interfacing involves getting video into the system and also sending alarms out. iOmniscient uses an XML schema which has become a default industry standard. ALL the event meta data that it generates can be transmitted to third party systems in real time in case they wish to integrate their system with iOmniscient.

iOmniscient's position on Standards

iOmniscient is the world's oldest independent video analytics company today. It has continuously operated at the leading edge of various technologies and many of these are internationally patented. These include technologies for performing behaviour analysis in crowds, for doing Face Recognition at very low resolution in uncontrolled environments, for Automated Response systems and for a host of other capabilities. With over 50 international patents there are many domains where there are just no other players.

The company believes in complying with all relevant standards. So it will accept videos from ONVIF compliant video streams. And it is working with various standard bodies (eg ISO and NIST) to encourage them to expand their definitions and testing regimes to include the most advanced technologies. iOmniscient has a representative on the Board of Standards Australia which participates in the setting of ISO standards.

It also always offers two levels of technology – a low end capability that meets the standards and is equivalent to all the other suppliers in the industry **and an advanced version that will do things that no other system will do.**

In the meantime, the best way for customers to understand the difference between traditional technologies and the advanced technologies that iOmniscient provides is to try them out in their own environment. As Co-Founder Dr Rustom Kanga once said, "iOmniscient products are like good Belgian Chocolate. Once you take one bite, then you cannot stop eating it".

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