

Video analytics play an important role in the IDF. Joe Charlaff speaks to **Major Nitzan Malca**, head of the operational video section in its C4I technology division, about the benefits that this capability brings.



Analyse this

The unpredictable nature of the ever changing scene in the Middle East requires the IDF to be prepared for all scenarios. Paper maps have become a thing of the past, and replaced with digital, interactive images in what is termed video analytics.

Malca is responsible for coordinating the various types of sensors that make up the network. The C4I corps was established with the purpose of enabling integrated operations on the ground, in the air and at sea, while improving operational effectiveness.

'Video analysis technology is fairly new in the IDF,' he said. 'Its much-needed development increased the amount of data that is sent by a large number of sensors that continues growing.'

Video and camera footage from an array of sources is funnelled back from the field to a central core and from there streamed forward, either automatically or based on an HQ staff officer's decision, to the appropriate field commanders.

The soldiers not only receive the relevant footage, but can also track enemy and friendly force movements on a digital map, which was not possible previously. Soldiers' queries can be posted into the system.

'We extract information from air, sea and land and condense it into one location, utilising the different sensors in order to grasp what is happening at any specific time,' Malca explained.

Coordinated force

The primary goal of introducing these advanced technologies is to coordinate all the requirements of the various forces in the IDF – naval, aerial or ground forces.

'One of the main challenges we faced was creating mobile sensors that can be used by the troops in battle,' he said,

adding that these are best dealt with when all of the components function as an interlinked network. This enables fighter jets, UAVs, tanks and infantry battalion commanders to share information, communicate the location of targets, and synchronise precision firepower, while staying in touch with general HQ and regional commands.

'The analytics show us at each stage how any situation needs to be dealt with. We also know where the sensors are located and we are able to calculate how to obtain the best quality picture,' he said.

Time critical

Malca emphasised that time is critical. If more than 380 milliseconds pass from the moment the sensors pick up a situation until the commander views the image on the internet video, it is no longer relevant.

The video conveys the actual situation – how the soldiers performed and how the enemy functioned. 'You always need to be one step ahead, and it's vital to save the information at the time that the video is produced. The sensors always remain static but the soldiers are tactical,' he said.

'To be in communication with the other forces – air force and navy – we need to have a common technology that is agreed upon, and a considerable amount of time is spent discussing with other branches of the IDF how best to coordinate,' he explained. 'If you don't have communication with the other branches, it leads to complications in operations where you need the full cooperation of all three branches of the IDF to succeed against the enemy.'

The many types of mobile sensors possess a wide range of vision, and when monitoring from multiple angles, they are able to detect small changes in a large

area. The information obtained may reveal incidents that the soldier in the field cannot pick up.

Sensors are deployed according to the situation and this gives soldiers a vital edge. Troops on the ground, for example, can detect any other forces around them with the mobile sensors, and thus are able to move accordingly and complete their mission successfully.

If the ground forces enter a building and require protection, using their radio connection they make contact with the video analyst operator from the air who is able to advise the force as to the location of the enemy, as was the case in Operation *Protective Edge* (2014 Israel-Gaza conflict).

'The analytics are able to show another dimension that would not be ordinarily known, as in the case of identifying something unusual in the activity of seemingly innocent people. The video provides a pop up and alerts the observer that additional checking is required.'

'We always have a video that shows us the surrounding situation, and using the analytics, we try to foresee any possible incidents,' he said.

'In the past five years, we grew from having ten to one thousand sensors, to many more thousands. The major problem is how the commanders deal with all of the knowledge and information, and to be able to extract the essential elements in order to reach a conclusion.'

'In the world of video analytics, we keep upgrading our systems in order to create smart technological warfare abilities. The C4I corps strives to develop and design new tools in the battlefield that are accessible to the commanders on ground and help us create a useful database for each force in the IDF,' Malca concluded. ■