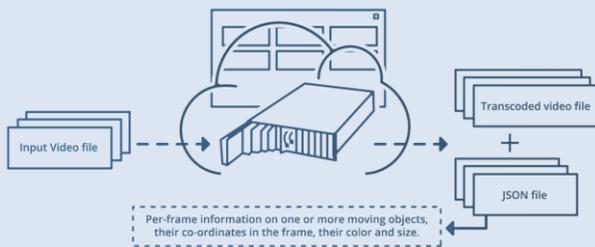## OBJECTDETECT™ VIDEO ANALYTICS *at-a-glance*

- Built for videos captured by cameras on drones
- Detect, track and characterize moving objects
- Objects to be detected are configurable in terms of size and speed: small and slow-moving objects like people as well as large, fast objects like trucks can be jointly or independently detected and tracked
- Ability to maintain tracking in the presence of cloud cover, tree cover and object stoppages
- Ability to deal with burnt-in metadata
- MPEG2, H.264 and HEVC Video
- 100% Software-based
- Deployed on expandable, high-density chassis
- HTTP, NFS and CIFS support
- Appliance or software solutions



Input Video file → Transcoded video file + JSON file

Per-frame information on one or more moving objects, their co-ordinates in the frame, their color and size.

To detect, track and characterize moving objects quickly, without requiring extensive up-front training, there is no solution that compares to Zipreel's ObjectDetect™.

ObjectDetect™ can: (a) process an input video file and provide per-frame information on the presence/absence of moving objects, their size, color, and co-ordinates (to aid downstream object recognition), (b) embed bounding boxes on the identified objects if needed, and (c) transcode the input video to make it viewable on web- and mobile-platforms. It provides an efficient and scalable solution that can ingest a variety of formats from a local storage source or a remote location (NFS, CIFS, HTTP) and create single bit-rate or adaptive bit-rate files for publishing to local archive or to a remote location.

Key differentiators are algorithmic techniques for the intelligent use of metadata to aid moving object detection and tracking as well as Zipreel's software technologies to reliably distribute transcoding workflows in a commodity cluster.

A convenient Web GUI, REST-ful APIs, along with in-built diagnostic and management tools, make the ObjectDetect™ platform easy to set up and manage.

## OBJECTDETECT™ SPECIFICATIONS:

**Compression Standards**
Video
  MPEG-2
    Simple, Main, and 422P Profile
    up to High Level
  MPEG-4 AVC/H.264
    Baseline, Main, and High Profile
    Up to Level 4.2 HD
  HEVC**
Audio
  Multiple programs per channel
  MPEG-1 layer 2
  MPEG-2 layer 3 (mp3)
  MPEG2/MPEG-4, AAC-LC, AAC-HE
  Dolby Digital E, AC-3 and pass through
  Sampling Frequency: 32, 44.1, 48 KHz

**Resolutions and Frame rates**
Flexible – QCIF to HD 1080p60
Mix and match resolutions, frame rates and bit rates – very flexible output configurations
Common Resolutions :
    576i and 480i x 720, 544 and 352 pixels @ 23.976, 25, 29.97 and 30 Hz
    1080i x 1920, 1440, 1280 and 960 pixels @ 23.976, 25, 29.97 and 30 Hz
    240p, 288p,480p,576p @ 10,12.5,15,20,23.976,30,50 and 59.94 and 60 Hz
    720p x 1280, 960 and 640 pixels @ 10, 12.5,15, 24, 30, 50 and 60 Hz
    1080p x 1920,1440,1280, and 960 pixels @ 10,12.5,15, 23.976, 50, 59.94, and 60 Hz (1080p60 is upgrade option)
Programmable to arbitrary output resolutions and frame rates

**Optional Processing**
  Format Conversion*
    PAL/NTSC to NTSC/PAL
    50i/25p to/from 60i/30p
    50p to/from 60p
  Cropping/Scaling (manual or AFD)
  Single in – multi-out(e.g. PIP)
  Noise Filtering*
  Audio Level Control

  *Features available upon request

**Object Detection**
For the objects to be detected, specify the real-world object size and object speed
Ability to simultaneously detect and track multiple different object sizes and speeds
Ability to maintain tracking in the presence of cloud cover, tree cover and object stoppages
Ability to deal with burnt-in metadata

**Transcoding**
Full decode/full re-encode mode
Scene Change Detection and I frame insertion
Fixed and Dynamic GOP Structures
Automatic quality adaptation based on in-stream activity

**Rate Control**
CBR, VBR
Single and Multi-pass modes

**I/O**
Inputs: MPEG2-TS, MP4, MPEG2-PS, MOV, MXF
Outputs: MPEG2-TS, MP4, Apple HLS, Microsoft Smooth Streaming, MPEG DASH*

**Input-Output Interfaces**
IP – Dual/Quad Gigabit Ethernet ports

**Configuration and Management**
Embedded web-server interface
SNMP Control
REST API for scripted operation

**Xeon Platforms**
Xeon 55XX, Xeon 56XX, E3-26xx, E3-12xx
Blades, 1U, 2U, 3U, 6U with redundant power options
Up to 4 Gpixels/sec processing on 3U platform

Δ Some features may change depending on market demand

**Available in 1Q2018