

# IRIS-VISTA

## Real time video stabilization for embedded devices

IRIS-VISTA is a unique video stabilization **software module** bringing advanced imaging capabilities to next generation smart-phones and mobile devices. It is a **flexible** and **scalable** solution fully optimized to run in real-time using minimal processing workloads and very low memory bandwidth when processing simple video and operate in standard mode or to operate in expert mode on videos featuring extreme motions to produce unprecedented results.



IRIS-VISTA has been optimized for the challenging computational environment of mobile devices and can provide outstanding results with **1080p30 and 1080p60** input in real-time within a typical high-end processing unit. The combination of high-quality results, **low computational requirements** and **low power consumption** makes IRIS-VISTA an excellent solution for mobile appliances.

In addition to motion compensation, IRIS-VISTA allows for the correction of **rolling shutter distortion** which results in geometric image distortions and in the so called «**jelly effect**», often present in videos captured with CMOS camera sensors.

### IRIS-VISTA use scenarios:

- Cameras of mobile devices
- Action cameras

### Unique features:

- Real time performance for full HD (30 and 60 fps)
- Able to run in fixed-point devices
- Low-power consumption
- Platform independent

## Features:

IRIS-VISTA is designed as a Video Stabilization System able to function in real-time and capable of processing 1080p30 video sequences (i.e. 1080×1960 resolution videos at 30 frames per second).

The system is designed to demonstrate the lowest possible power consumption under each mode of operation. IRIS-VISTA strives to minimize cycles per pixel so that the core processor can be clocked below its nominal maximum clock rate. In order to achieve this, IRIS-VISTA was designed to fully exploit the special architectural characteristics of any processing core such as VLIW and SIMD vectorization.

In addition, IRIS-VISTA was developed in order to be compatible with the fixed-point nature of most of the modern mobile processing cores, incorporating arithmetic techniques that do not require floating-point calculations.

The use of IRIS-VISTA in a mobile scenario imposes requirements for **low power consumption, limited memory use and clock speed** which are successfully met in the platforms that IRIS-VISTA currently supports and is guaranteed for any future implementation.

For OEM integration, IRIS-VISTA's use of a number of controlling parameters that enable any system designer and integrator to fit the system optimally to any SoC design.

## Supported Platforms:

IRIS-VISTA is platform-independent software IP able to run in various fixed-point and floating-point cores. Platforms currently supported include **Tensilica/Cadence IVP, ARM Cortex A9** and **Texas Instrument Da Vinci** family. IRIS-VISTA is also available in **RTL code** for FPGA implementation.

Other platforms can also be supported.

## Deliverables:

Library files, technical documents, etc. per supported platform. For details, please contact Irida Labs.

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