## 1.1 Video interface

## 1.1.1 Introduction

The VIF (Video Interface) is used to sync and control the multi video source data from peripheral camera. Up to 11 video sources are supported in the system, contains 1 HDMI interface, 2 DVP interface and 8 MIPI CSI interface. The video data can be written to DDR or sent to ISP directly. What’s more, audio data input is also supported and can be written to DDR.

## 1.1.2 Architecture



Figure: VIF Architecture

The VIF mainly consists of three blocks:

VIDEO2SYNC: Sync the source data from different source clock domain to one clock domain.

VIDEO\_ISPIF: Process the source data and send it to ISP.

VIDEO\_BPIF: Process the source data and write it to DDR.

## 1.1.3 Feathers

* Build in test with pattern generate and CRC check.
* Configure and reconstruct input video sequence timing.
* Support 4K video in both ISPIF and BPIF mode.
* Support up to 8 path of video input in ISPIF mode and 2 path of video input in BPIF mode.
* Support multi datatype.
* YUV420 8-bit (legacy) / 8-bit / 10-bit / 8-bit (CSPS) / 10-bit (CSPS)
* YUV422 8-bit / 10-bit
* RGB888 / RGB666 / RGB565 / RGB555 / RGB444
* RAW6 / RAW7 / RAW8 / RAW10 / RAW12 / RAW14 / RAW16