



GL3008 Fisheye Image Processor Introduction

V1.33 ,Nov. 2025

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About Genesys Logic

Established in Y1997

- Taiwan OTC from Y2001 (TWSC: 6104)
- Focus on SerDes technology

Financial Status

- Capital: US\$30M
- Revenue: US\$108M (Y2022)

Top Management

- CEO: David Wang
- COO: Linus Wang



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Genesys Product Lines

- USB Hub & PD

(W.W No.1 market share)

- Hub Controller
- Power Delivery



- Storage

(Top 2 market share)

- Flash Card Reader Controller
- Smartcard/SIM card Reader Controller
- SATA Controller



- Imaging Video

(Scanner W.W No.1 market share)

- PC/ARM Based USB Scanner Controller
- USB VGA/HD Camera Controller
- Fisheye & ISP Image Processor



- Others

- USB Host Charger Controller
- PCIe x 1 PHY, PCIe x 4 PHY



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Video Product Roadmap

■ MP ■ CS ■ Planning

2024

2025

2026

GL3004 QFN76/64

- 3M Fisheye Processor
- ISP4.0 & de-warping
- MIPI & DVP output

MP: 2026 Q1

GL3008 QFN 88/128 (10x10/14x14mm)

- 4K/30fps Fisheye Processor
- ISP5.0 with 3DNR
- Multiple de-warping
- MIPI & USB3.2 output

GL3012

QFN88 (10x10mm)

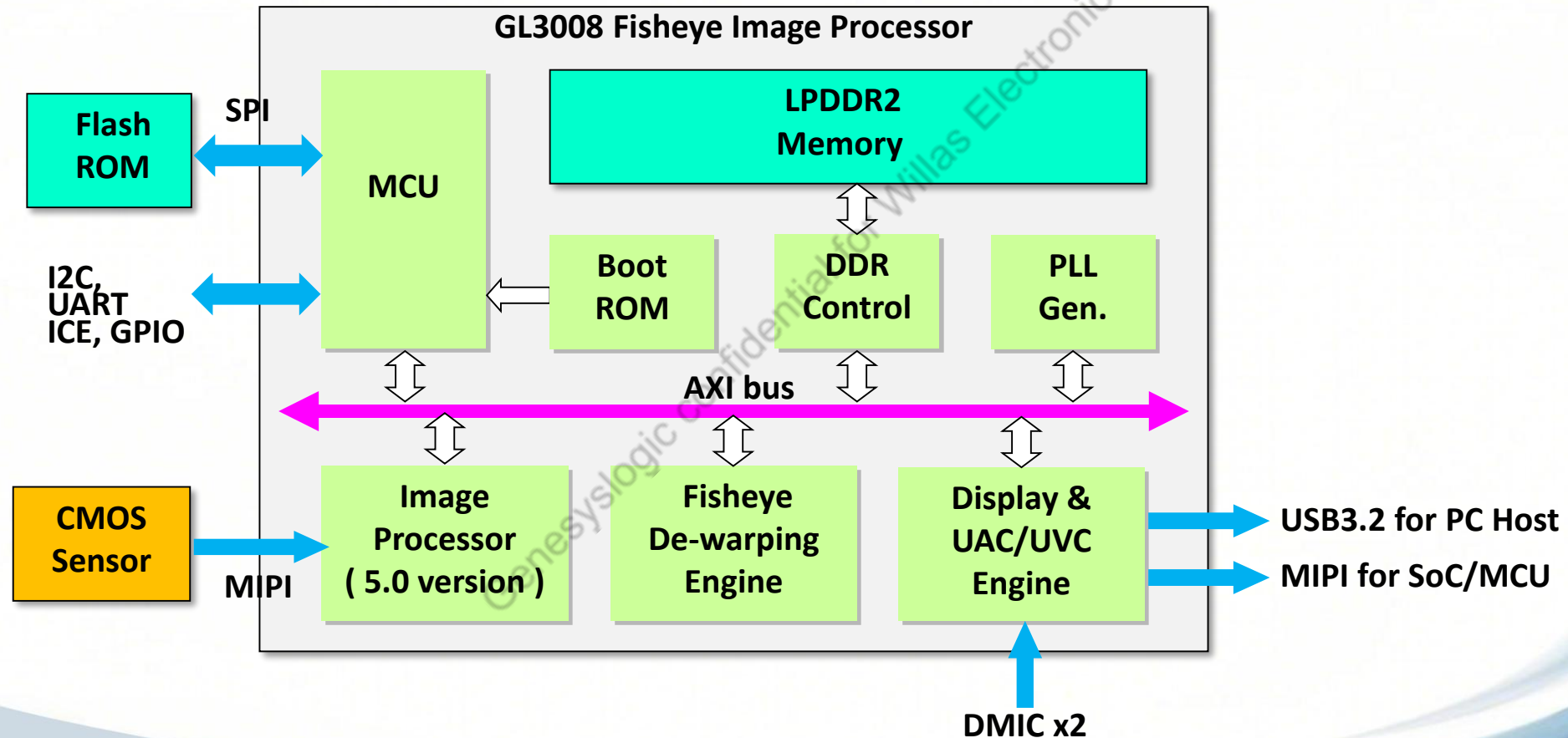
- 4K/30fps Fisheye processor
- Dual video stream input
- ISP 6.0 with 2D/3DNR
- Support RGB-IR sensor
- Support SONY HDR sensor
- Support HDR & PDAF
- Support virtual channel
- Support dual video streaming output simultaneously
- Output interface support DVP/MIPI/USB 3.2 Gen 1/2

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GL3008 Functional Block

- GL3008 is a feature-rich fisheye image processor for wide-angle applications
- The GL3008 integrates Full ISP, Fisheye Correction, Display Engine, MCU, DDR2 and common interface



GL3008 4K Fisheye Processor

Features	Description
Max Pix. Resolution	Input 9M@30fps , Output 4K@30fps
Fisheye Correction	Customized Correction, Panorama Dewarping, Perspective Dewarping
Multiple DeWarp	Fisheye, Panorama, Single, Bird, Multi-Views, 360°, ePTZ, PiP 8 ROI Windows in a frame
Image Processing	Companding-HDR, AE/AWB/AF, 2/3DNR, LSC, DPC, BLC, Sharpness, CCM, Gamma, WDR, FCS, Scaling, Image Rotation, Double Frame-Rate
OSD	Static/Dynamic 8-layers Graphic and Font Overlay
Input Interface	4 Lanes MIPI : 8/10/12-bit RAW or YUV422 1.2Gbps maximum data transfer rate per lane
Output Interface	MIPI : 8/10/12-bit RAW (ISP processed) or 8-bit YUV422 USB3.2 Gen1 Type C: UAC/UGC MJPEG or 8-bits YUV422 DVP: BT656 or BT1120 HW or SW dual streaming for AI application
Audio	Digital MIC input up to 2 channels of I2S input
Operating Temperature	Commerce grade -40°~85°
Package	QFN128(14x14mm) or QFN88 (10x10mm)

Panorama Dewarping vs. Perspective Dewarping

Spherical Projection (Panorama Dewarping)

Original



After Dewarping



Support fisheye lens spec. up to FOV-220°

Perspective Dewarping

Original



After Dewarping



Wide Dynamic Range

- GL3008 WDR is implemented by local tone-mapping algorithm
- Automatically adjust image dynamic range in order to restore detail texture in over exposure & darkness area

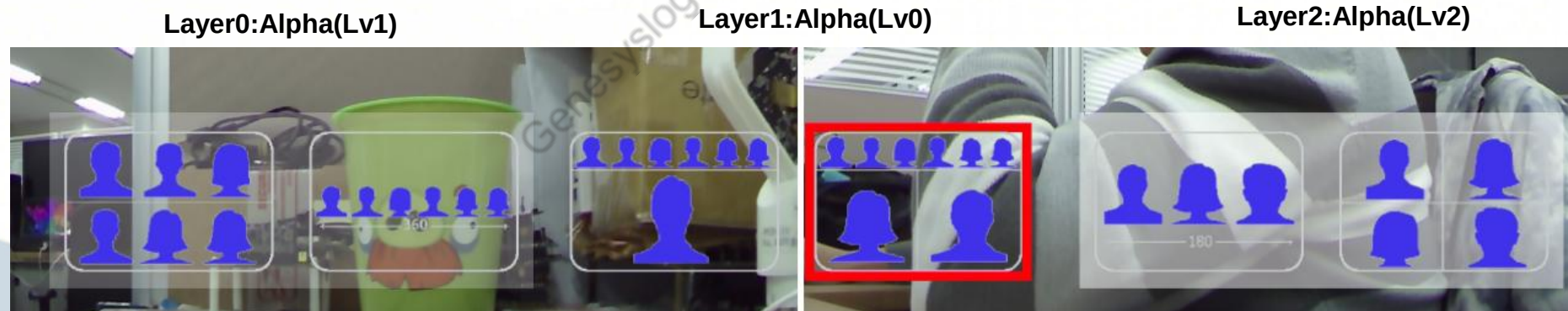


WDR
→



OSD function

- **8-Layer Graphic OSD**
 - 8-layers of the user defined graphics can overlay to the video
 - Support 4 or 16 color index and alpha(4 level) for every layer
 - Graphic data can be compressed in flash. The compressed size will depend on color index and image complexity.
- **Line Drawing and Bounding Box**
 - 10 Line drawing for window splitter and border on Top/Bottom/Left/Right
 - 10 Bounding Box for user application
 - Individual line width, color and alpha for every Line & Box
- **Example: “Different display mode selection”**
 - 3 layer graphic: 4 color 784x284 * 3 → total 27 KB in flash.



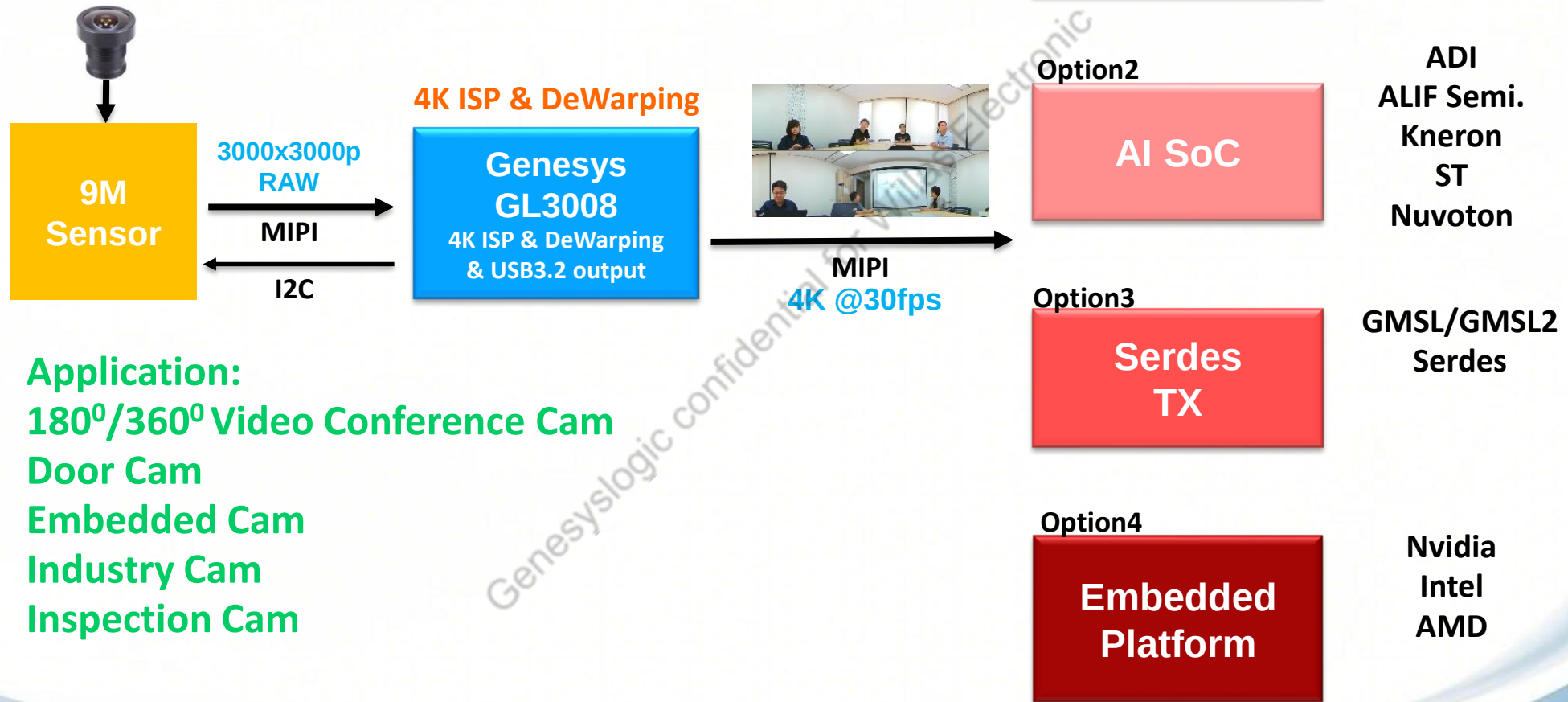
GL3008 Fisheye Correction/ISP 應用

★ 180°/360° Video Conference 全景會議系統	★ Document camera 實物投影儀	★ Robotic camera AGV/AMR 機器人	★ Drone 低空無人機
★ Door Bell 可視門鈴	★ Lawnmower camera 自動除草機	Body camera 隨身攝影機	Electronic Lock 智慧門鎖
Baby Monitor 嬰兒監控攝影機	Video Bridge 影像轉換	Vending Machine 自動販賣機	★ Elevator camera 電梯
★ Bus Blind Zone cam. 巴士/卡車盲區偵測	Remote Teaching 遠距教學	★ Video Borescope 內視鏡	★ Security Camera 180°/360° 監控
★ Smart Factory 智慧工廠	Smart Parking Pole 智慧停車樁	★ AI Camera AI 攝影機	Live-Streaming camera 直播

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GL3008 4K MIPI Camera



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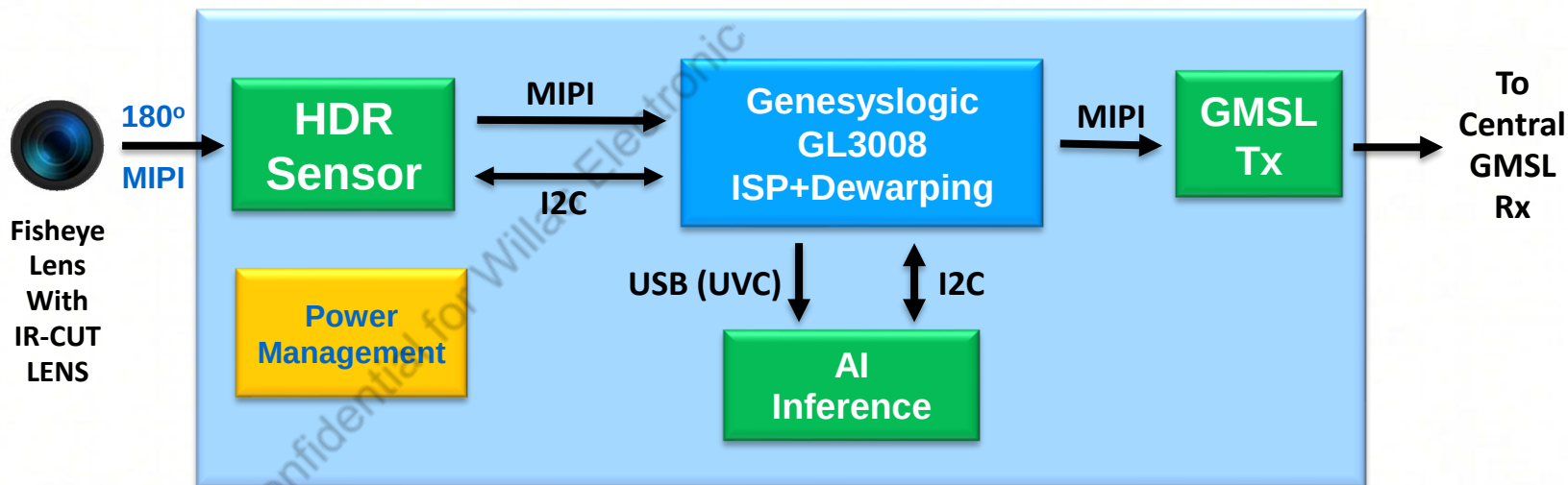
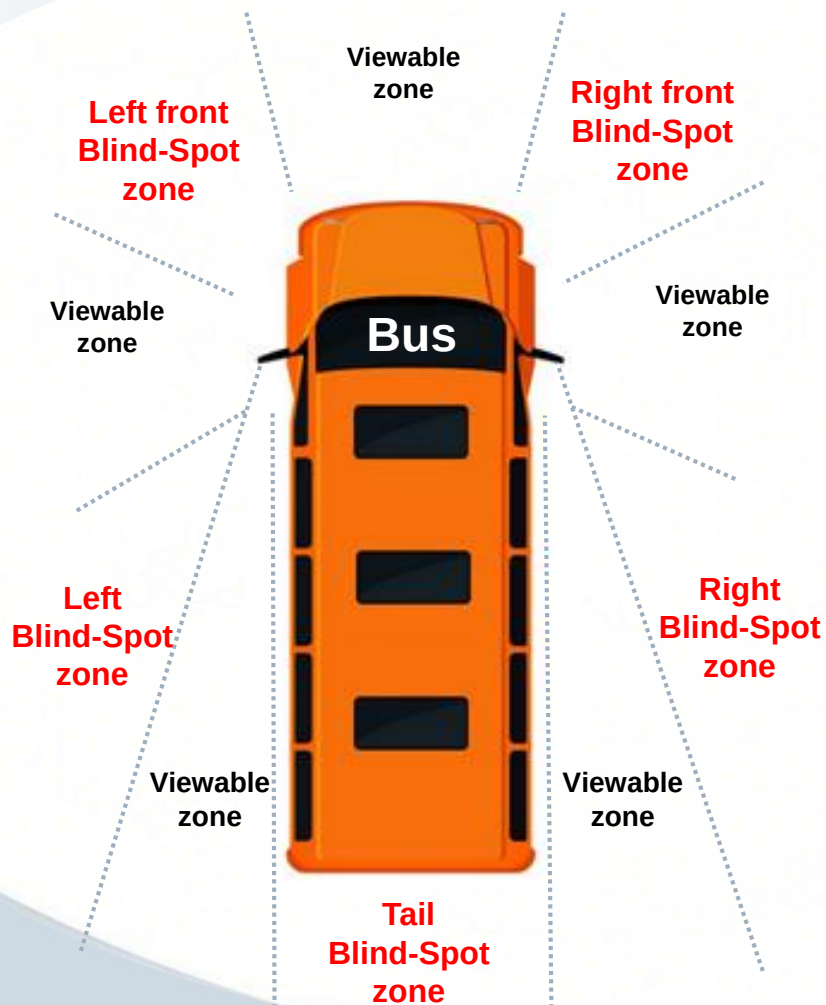
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GL3008 for MIPI to USB 3.0 bridge/converter



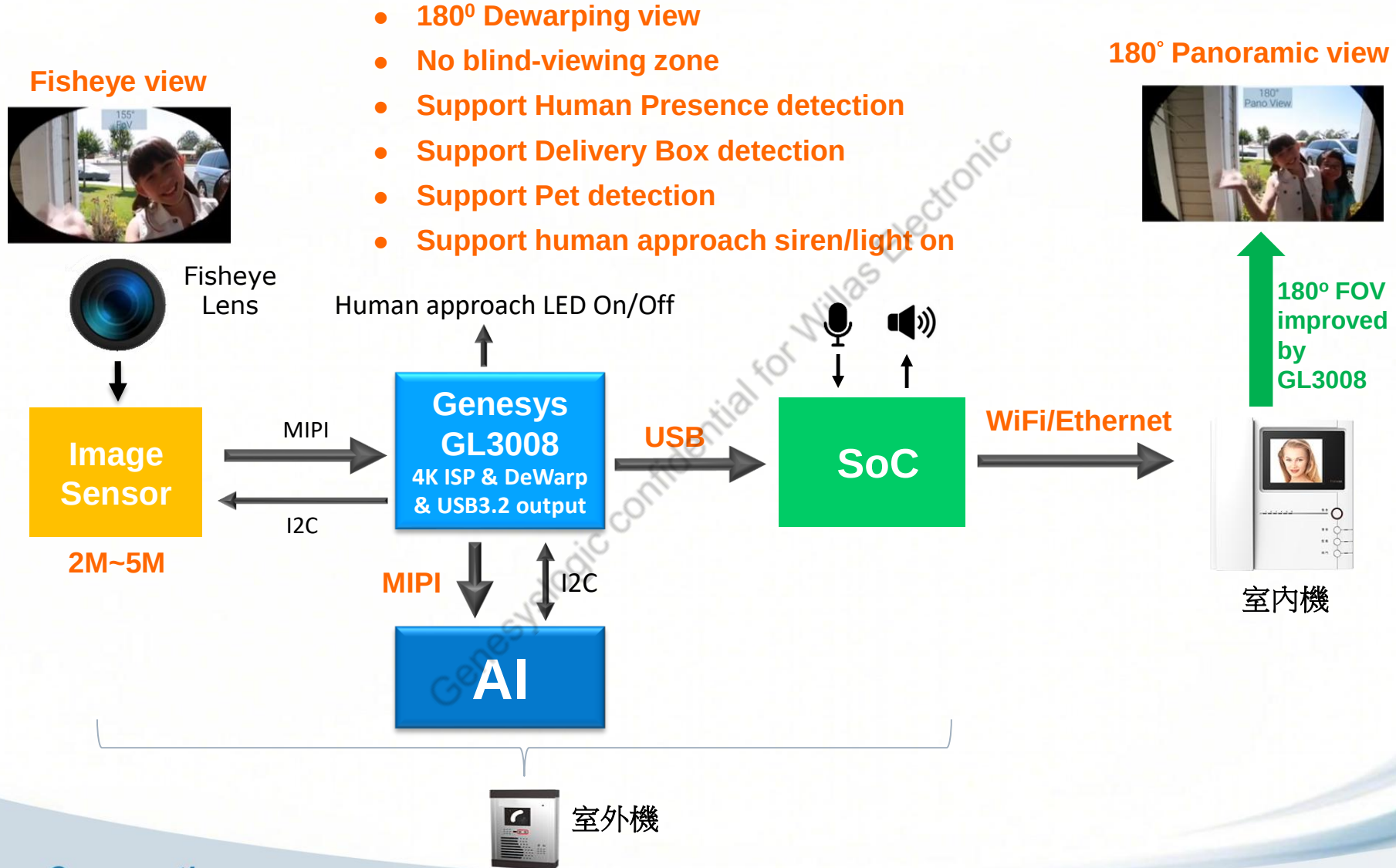
- **Input : MIPI 4 lanes CSI-2 receiver with 1.2 G/bps each line**
 - Input format option 1: 8/10/12-bit Raw Data
 - Input format option 2: 8-bit YUV422
- **Output : MIPI or USB or MIPI+USB**
 - Output format option 1: USB 3.2 Gen 1 UVC MJPEG/UAC
 - Output format option 2: 8-bit MIPI 4K YUV422 @ 30fps
 - Output format option 3: 8/10/12-bit MIPI raw data
- **Perfect for verifying MIPI video signal !**

GL3008 for Bus/Truck Blind Spot detection (巴士/卡車 盲區偵測)



- Camera module can cover 6m (left+right) with 180°
- Work with any AI MCU (Kneron, Nuvoton, Alif,.....)
- AI inference : pedestrian, motorcycle, and so on
- Response immediately

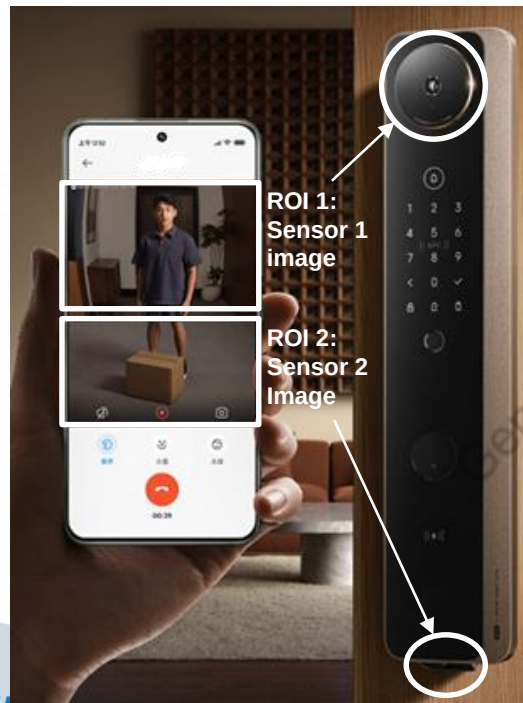
GL3008 for Doorbell – 2M~5M solution



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GL3008 for Smart Door-lock



- Only one CMOS Sensor Needed
- Resolution can support up to 4K @ 30 fps
- Support HFOV 180 wide angle , no hidden area
- Support up to 8 ROI windows
- Support Human Presence detection*
- Support people loiter detection*
- Support Delivery Box detection*
- Support Pet detection*
- Support human approach siren/light on

GL3008 for Live-Streaming/Teaching

- ◆ Only need one Sensor and LENS, utilizing ePTZ to adjust viewing angle, such as live-streaming and remote-teaching mode.



高雄市執行率最高——六都行人專用及早開時相狀況

	台北市	新北市	桃園市	台中市	台南市	高雄市
設置總數	637處 (231處專用、 406處早開)	257處 (136處專用、 121處早開)	103處 (10處專用、 93處早開)	67處 (32處專用、 35處早開)	46處 (49處專用、 15處早開)	441處 (90處專用、 351處早開)
2023年總目標 (專用+早開)	1140處	450處	100處	300處	100處	500處
執行率	56%	57%	57%	22%	64%	88%
市內行人肇事 熱點路口(計) 及改善狀況	23處、 其中18處為 專用或早開	85處、 其中40處為 專用或早開	30處、 全為早開	10處、 其中2處為專 用或早開	50處、 其中30處為 專用或早開	30處、 其中21處為 專用或早開
2022年路口事 故行人死傷數 及同期增加率	1317人 增加10%	1666人 增加8%	1304人 增加12.3%	700人 增加14.7%	700人 增加18.8%	714人 減少3.9%

計：行人肇事熱點路口，為過去3年間曾發生行人受傷30日內死亡之路口
資料來源：六都交通局、交通部運輸研究所、整理：陳子暉

執行過程的一
大考驗。
台北市
交通控制中心
主任王國銘就
說，北市曾經
在忠孝東路、
復興南路口試
辦專用時相，
但實施後，車
流回堵數公
里，最後只能
終止辦理，退
而求其次，改
採對行人保護
程度較低的早
開時相。高雄
市交通局副局
長劉建邦也坦
言，為降低對

改善則，卻未正確投藥，原
因在於相關調查做得不夠充
分，且在事故調查分析時，時
相設置條件上，交通部也未
訂定參考的標準規範，讓地
方難以有效執行。
「為什麼台灣現在很難做
交通安全改善，就是因為我
們沒有「進步」調查。」台
灣大學土木系學系交通工
程組教授許添添強調，設置
行車專用或早開時相，短期
當然可降低人車衝突，但還
須搭配分析各地事故不同肇
因，才能知道如何解決問題。
他點出，現在行人事故
調查高度仰賴警察單位，雖
有事故警因統計，但應從交
通專業角度「重新分析」例
如，行人事故肇因多是「未
注意車前狀況」，但為何沒注
意？是駕駛個人問題，或是

交通部長陳水扁：在十字路口
但不僅實路上車執行，也要在車上之通。

交通部長陳水扁

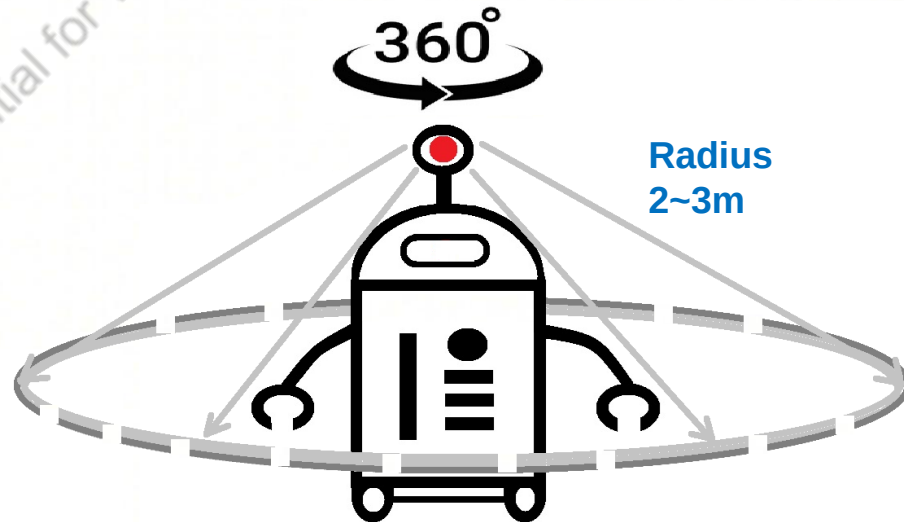
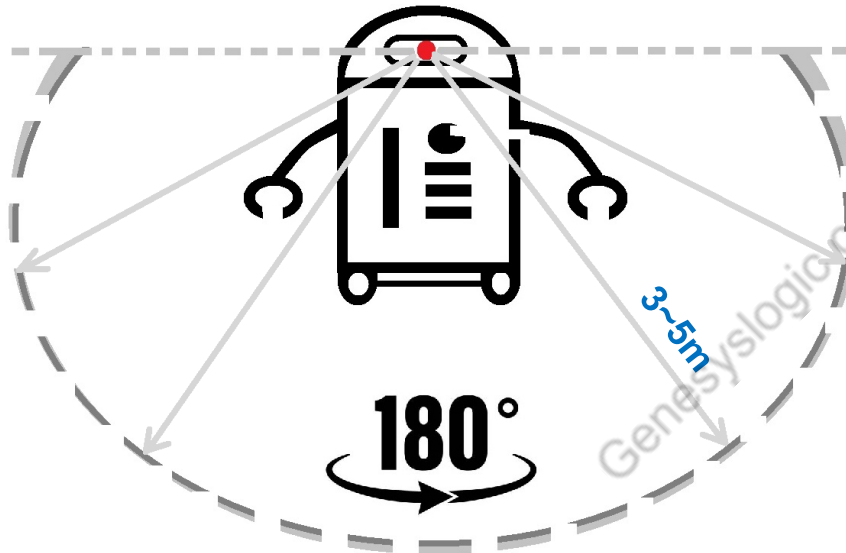
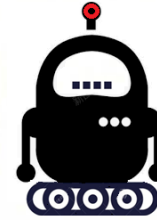
PIP Mode

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GL3008 for ROBOTICS

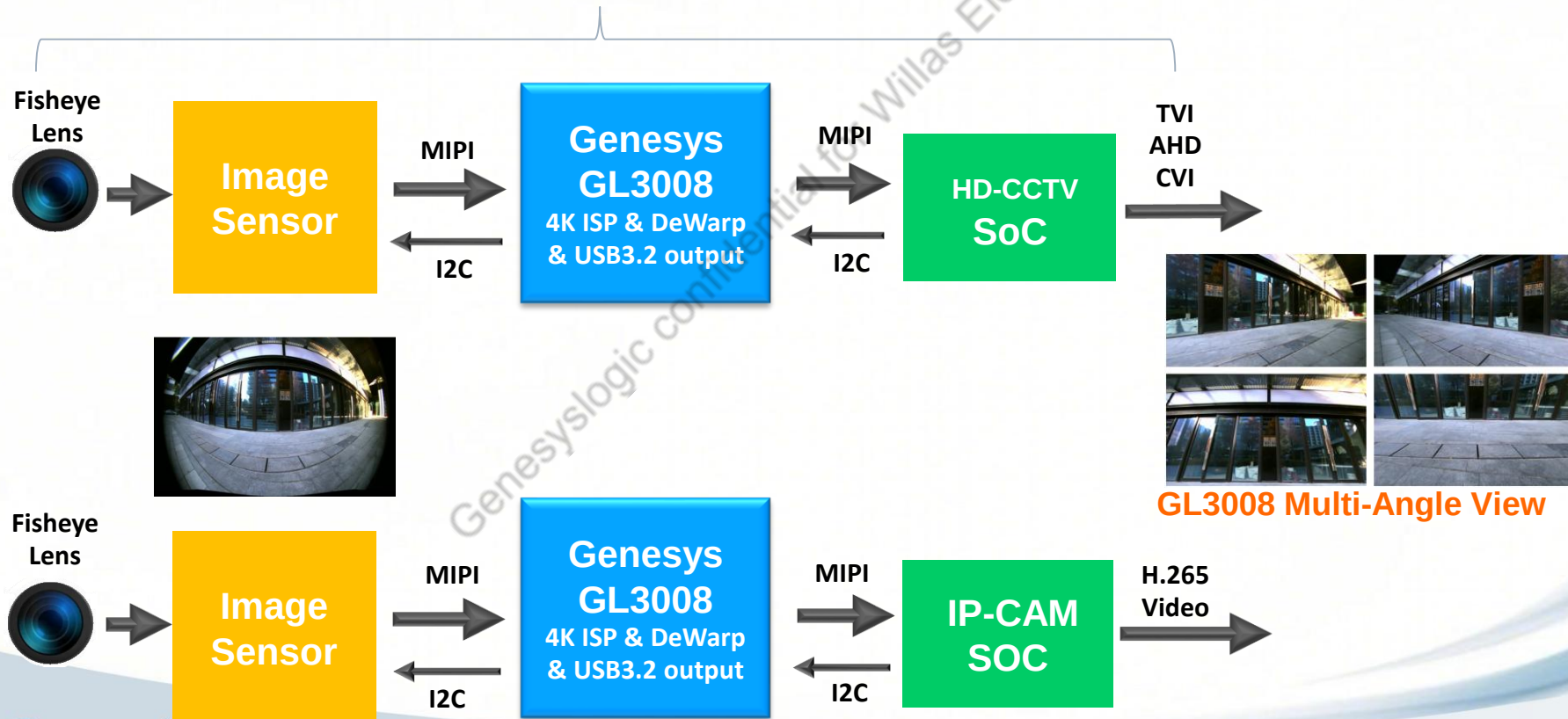
- 180°/ 360° Dewarping view
 - No image stitching needed
 - Support Human detection
 - Support H/W or S/W dual streaming for AI application
 - Support setup up to 8 ROI windows/ePTZ control



GL3008 for Surveillance

- **Wide-Angle Camera Application**

- IP Camera , 360° ePTZ Camera
- Apply different dewarping technologies
- Up to 8 ROI window can be set up simultaneously



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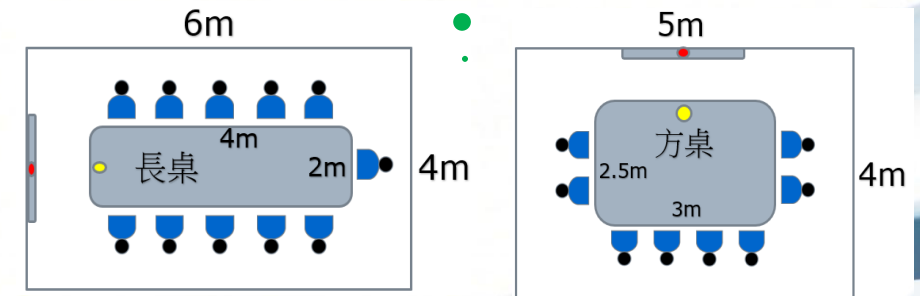
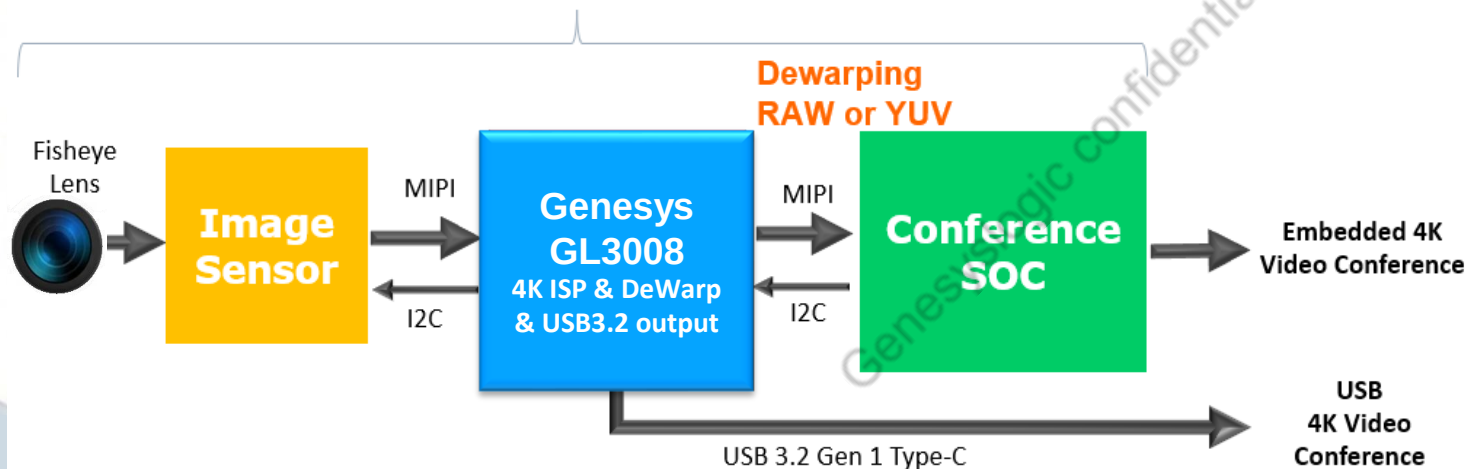
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GL3008 for Video Conference

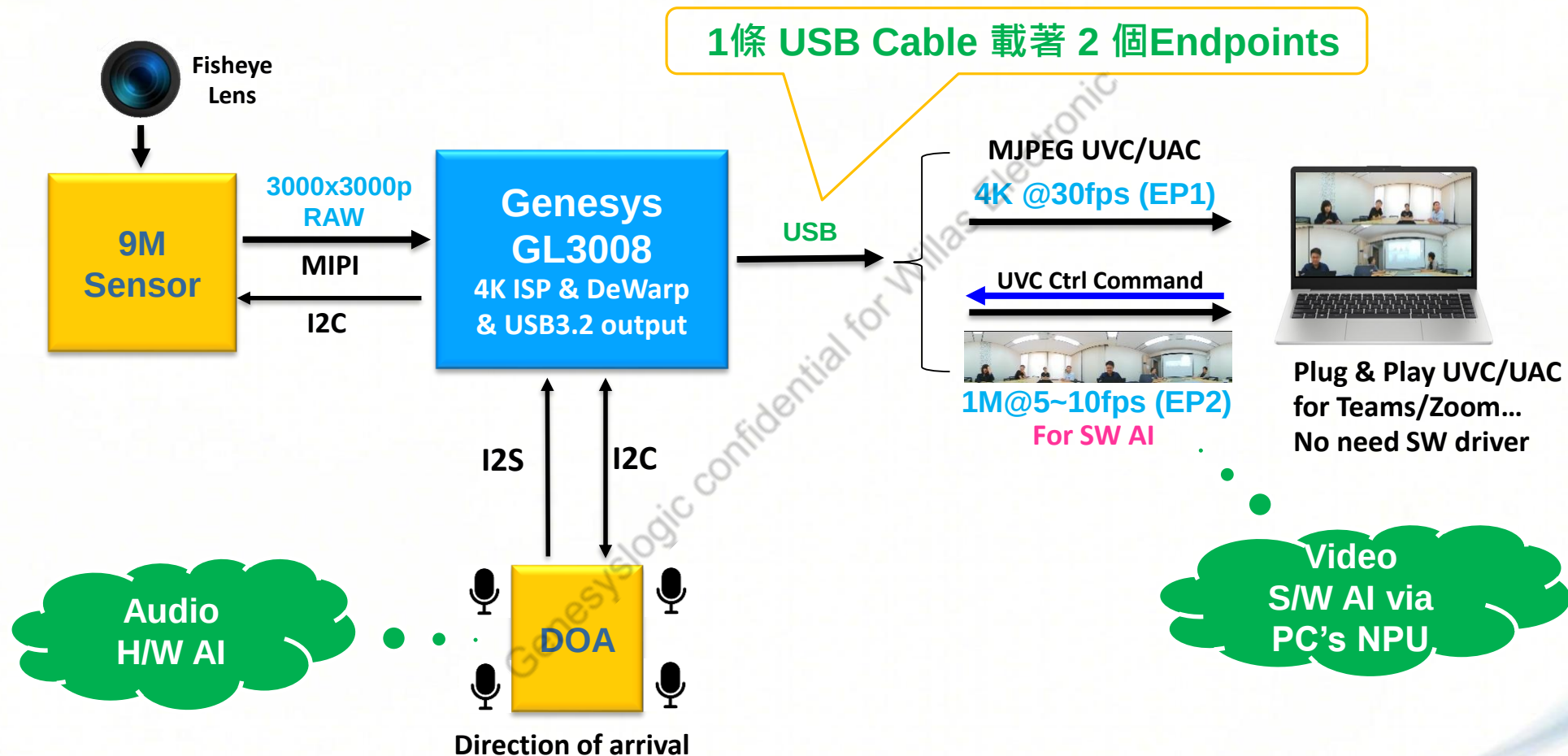
- **Wide-Angle Camera Application**
 - FOV(H)-180° video conference
 - FOV(H)-360° video conference
 - Different viewing window switchable



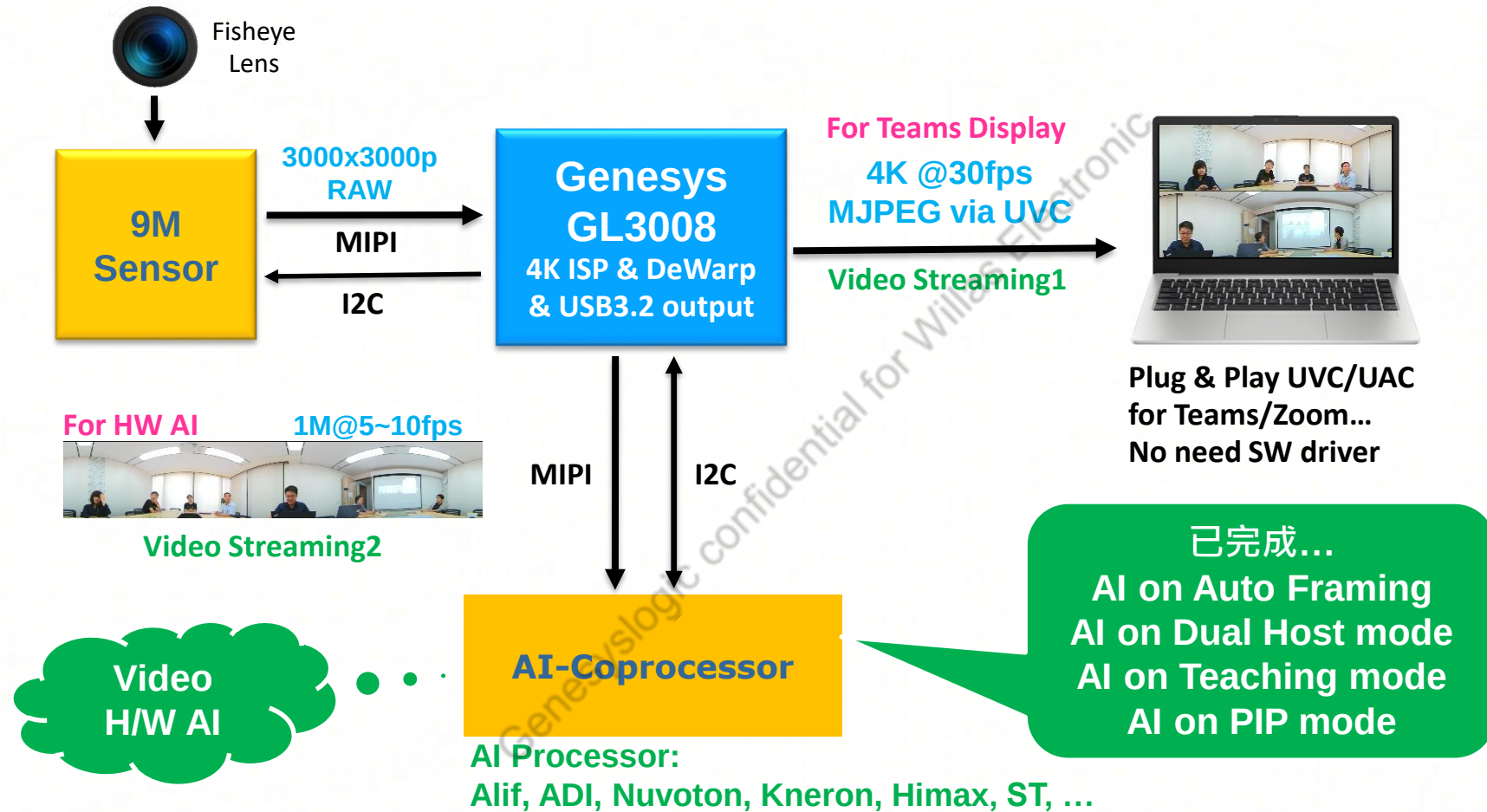
Video Conference Camera



180°/360° Video Conferencing Proposal (SW Dual Streaming)



180°/360° Video Conferencing Proposal (HW Dual streaming)



GL3008 Advantage Summary

- ◆ 支援 最高 4K resolution 全景 & 透視 Dewarping
- ◆ 單一鏡頭實現 180°/360° 廣角影像, 不需影像縫合
- ◆ 180°/360° video 能同時存在並顯示
- ◆ 不需外接 DDR, 電路設計簡單
- ◆ 支援最多 8 個 ROI windows, 及獨立 ePTZ 控制, 以因應不同應用
- ◆ 支援 MIPI 及 USB3.2 Gen1 Type-C 影像輸出介面
- ◆ 支援 H/W and S/W 影像雙碼串流同時輸出
- ◆ 可當 魚眼校正 IC, 4K MIPI ISP, or 4K USB 3.0 ISP 使用

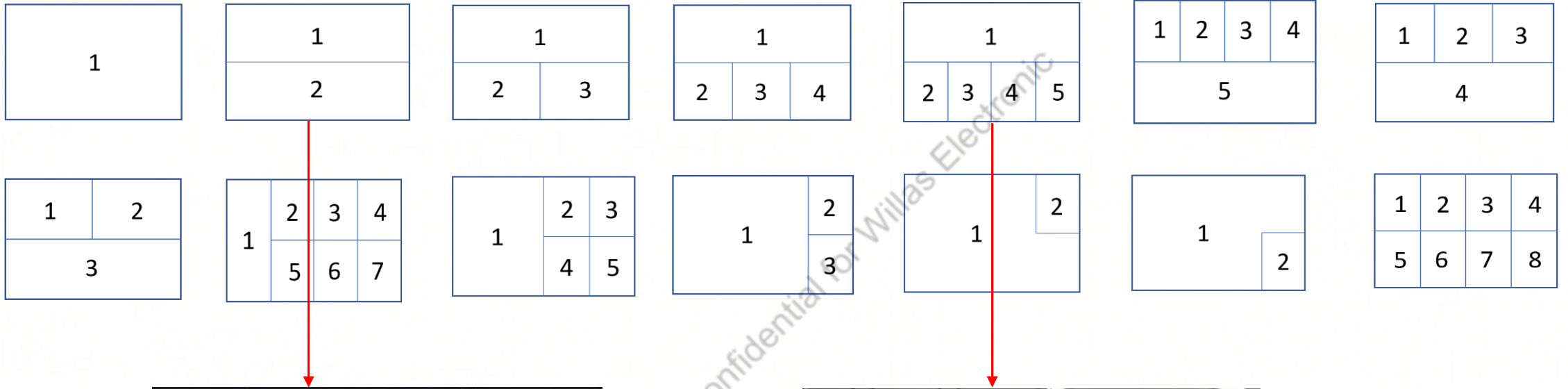
Thank You !

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8 ROI Windows



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GL3008 Sensor support list

Brand	Model Number	Sensor Size (inch)	Resolution	Screen Aspect Ratio	Companding HDR
SONY	IMX415	1/2.8 3840x2160	8M	16:9	No
SONY	IMX577	1/2.3 4056x3040	12M	4:3	No
OnSemi	AR0330	1/3 2048x1536	3M	4:3	No
OnSemi	AR0822	1/1.8 3840x2160	8M	16:9	Yes
OnSemi	AR1335	1/3.2 4208x3120	13M	4:3	No
OmniVision	OV05C10	1/4.7 2880x1808	5M	16:10	No
PixelPlus	PK5210N	1/2.7 1920x1080	2M	16:9	Yes
GalaxyCore	GC4103	1/3 2048x2048	4M	1:1	No
SmartSense	SC630AI	1/2.5 2564x2564	6M	1:1	Yes
SOI	JX-F51	1/3 1536x1536	3M	1:1	No

Frame Rate capability

Format	Resolution	USB 3.2 Gen 1		MIPI	
		FPS (MJPEG)	FPS (YUY2)	FPS (RAW)	FPS (YUY2)
VGA	640x480	300	300	300	300
SVGA	800x600	240	240	240	240
XGA	1024x768	210	150	210	210
HD	1280x720	180	120	180	180
SXGA	1280x1024	150	90	150	150
FHD (16:9)	1920x1080	120	57	120	120
2K	2560x1440	60	30	60	60
4K	3840x2160	30	14	30	30

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Product selection Guide

	Functionality		Output Interface						
Part Number	Dewarping	4K ISP	MIPI	USB 3.0 Type-A	USB 3.0 Type-C	16-bits DVP	Package	Ordering Number	Application
GL3008	√	√	√		√		QFN128	GL3008-OX3Y	USB Camera H/W Dual-Streaming
GL3009	√	√	√	√			QFN88	GL3009-OV3Y	USB Camera H/W Dual-Streaming
GL3010		√	√	√			QFN88	GL3010-OV4Y	MIPI Camera H/W Dual-Streaming
GL3012		√			√		QFN88	GL3012-OV5Y	USB Camera

Thank You

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