



"Sony's hybrid video security solutions allow you seamless integration of old and new for today and tomorrow across the complete Sony range and other manufacturers' products."

## Sony Video Security

Professional Solutions Europe  
Chris Vandebrouck



SONY

## Environment

Increased Demand for Video Security



Acceleration of Analog to IP



Higher resolution  
- Cameras  
- Displays



SONY

## Concept and videosurveillance

---

- 1) Risk Analysis
- 2) 4 items have to be under control : *The BIG 4*
  - Resolution
  - X fps
  - Remaining storage days
  - Images ' transfert (bandwith, LoS)
- 3) Added Value & Return On Investment

**SONY**

## Intelligent Video Analysis...Security for a modern world



### 1 Security & risk's analysis

Security is a subjective feeling

*Do I feel secure, safe ?*

*What do you consider as a risk ?*

*How could we protect people, assets and business activities ?*

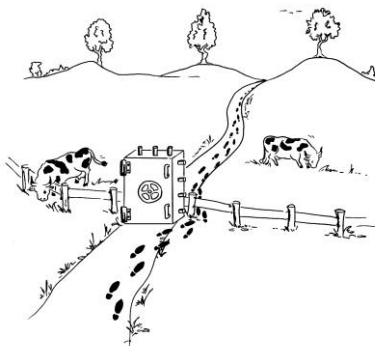
**SONY**

## 1) Risk analysis / The stages of a security project

- |                              |   |   |
|------------------------------|---|---|
| <b>1. Security policy</b>    | ⇒ | Corporate policy, objectives, acceptability of risks                      |
| <b>2. Security planning</b>  | ⇒ | Risk analysis, evaluation, priorities                                     |
| <b>3. Protection concept</b> | ⇒ | Risk reduction strategy, independent of system                            |
| <b>4. Systems concept</b>    | ⇒ | Implementation, using specific system(s)                                  |
| <b>5. Installation</b>       | ⇒ | Installation of the system  |
| <b>6. Commissioning</b>      | ⇒ | Set the system up, test and debug   |
| <b>7. Handover</b>           | ⇒ | Hand system over to customer, train users                                 |
| <b>8. Maintenance</b>        | ⇒ | Periodical check of technical functions, verification of security concept |

SONY

## About the necessity for security planning



SONY

# The hot spots : $R = P \times f \times C$

## 2. Security planning

- 1. Security policy
- 2. Security planning
- 3. Protection concept
- 4. Systems concept
- 5. Installation
- 6. Commissioning
- 7. Handover
- 8. Maintenance

Threat / person property at risk		Crimes						Fire				Events		
Limit - geographical - functional - organizational		Hold-up	Theft	Burglary	Kidnapping	Hostage-taking	Blackmail	Fire	Smoke (corrosive, toxic)	Deflagration	Explosion	Heating breakdown	Air conditioning breakdown	Environmental damage (lightning, earthquake, storm)
Reference objects	No.	1	2	3	4	5	6	1	2	3	4	1	2	3
Main building	1						2 2 4					1 2 2	2 1 2	
Sales	2						3 3 3							
EDP	3	2 2 4		3 3 9				2 2 4						
Telephone switchboard	4				3 3 9			2 2 4						
Kitchen/canteen	5	1 1 1						2 2 4						
Penthouse (management)	6		2 4 8	4 3 12										

SONY

# Elements of a partial concept

## 3. Protection concept

- 1. Security policy
- 2. Security planning
- 3. Protection concept
- 4. Systems concept
- 5. Installation
- 6. Commissioning
- 7. Handover
- 8. Maintenance

	Holdup	Burglary	Hostage take	Theft	Sabotage
Manager	●	●	●	●	●
Staff	●	●	●	●	●
Archive	●	●	●	●	●

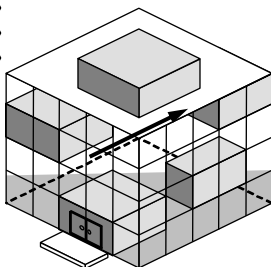
Typical objectives

- Prevent theft
- Detect burglary
- Hinder sabotage
- .....

Typical measures

	Physical measures	Organizational measures	Electronic measures
Options:	<ul style="list-style-type: none"> <li>• Prevent totally</li> <li>• Prevent</li> <li>• Hinder</li> </ul>	<ul style="list-style-type: none"> <li>• Increase awareness of incidents</li> <li>• Record Information's</li> <li>• Ensure Intervention</li> </ul>	<ul style="list-style-type: none"> <li>• Detect</li> <li>• Indicate</li> <li>• Transmit</li> </ul>
Examples	<ul style="list-style-type: none"> <li>• Security glazing on outer windows</li> <li>• Knob only doors</li> </ul>	<ul style="list-style-type: none"> <li>• Suspicious activity</li> <li>• Entry into protected area</li> <li>• access to protected assets</li> <li>• access to protected assets</li> </ul>	<ul style="list-style-type: none"> <li>• Entry into restricted area</li> <li>• Theft of monitored properties</li> </ul>
What	<ul style="list-style-type: none"> <li>• Entry into protected area</li> <li>• access to protected assets</li> </ul>	<ul style="list-style-type: none"> <li>• Suspicious activity</li> <li>• Entry into protected area</li> <li>• access to protected assets</li> </ul>	<ul style="list-style-type: none"> <li>• Entry into restricted area</li> <li>• Theft of monitored properties</li> </ul>

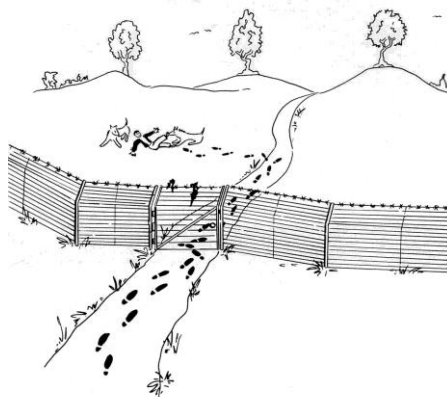
Typical risks



SONY

## The result of a little thinking

---



SONY

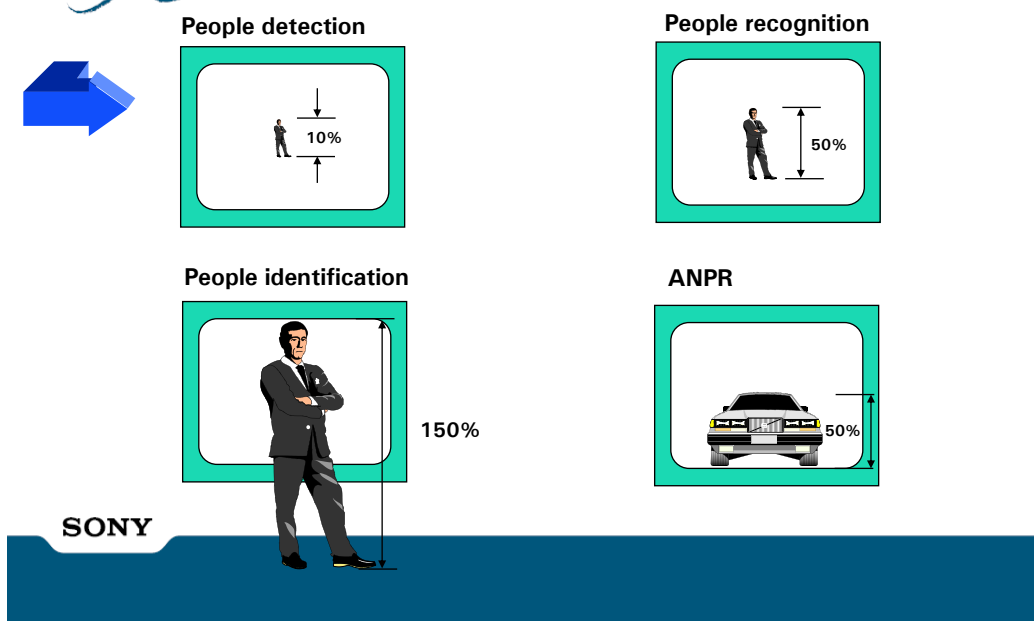
## 2) The Big 4

---

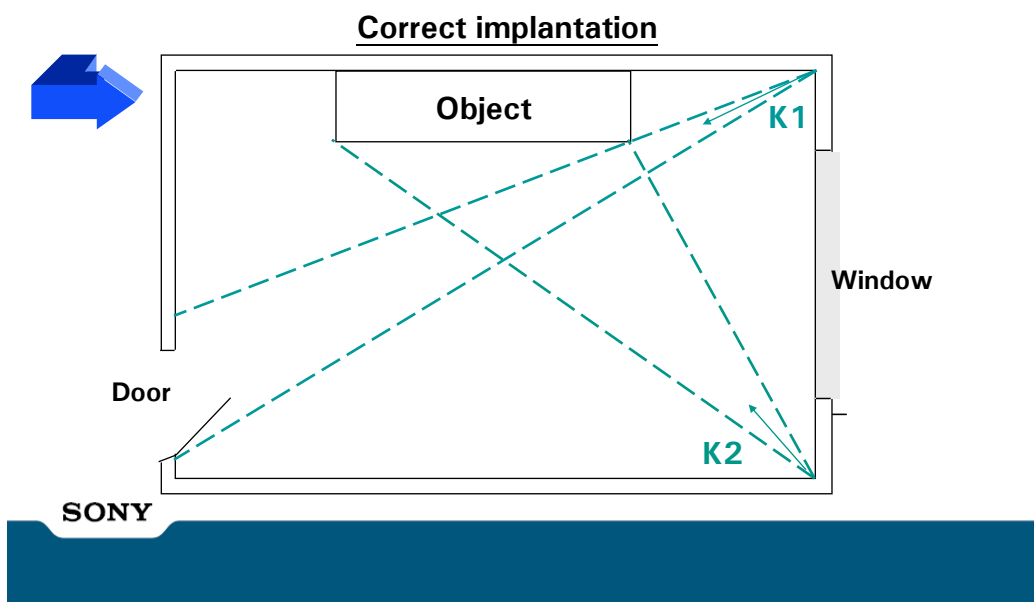
- Resolution : what do you want to see ?
- fps
- Remaining storing days
- Compression / Transfert / Los / Bandwith calculation (Dual streaming H264)

SONY

## What do you want to see ?



## Camera Mounting location



## Electronic obturator (programmable & auto-iris)

---



Low speed (obturator)

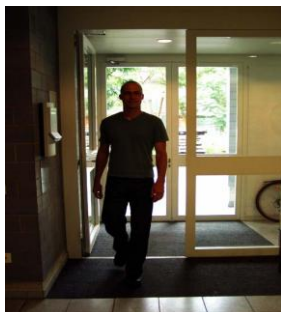


High Speed (obturator)

**SONY**

## Back light compensation

---



OFF



ON

**SONY**

## Inversion

---



OFF



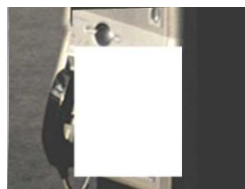
ON

**SONY**

## SONY PTZ intelligent masking SYSTEM

---

- A privacy zone masking a telephone keypad



**SONY**

### 3) Added Value, ROI & Videosurveillance

---

- Return On Investment by :
  - Being part of our customers ' business
  - Added value for intrusion detection (T2<T1 ; recording data)
  - How do we reduce false alarms
  - Optimum cost between videosurveillance & guardening (including added value for guardening)

SONY

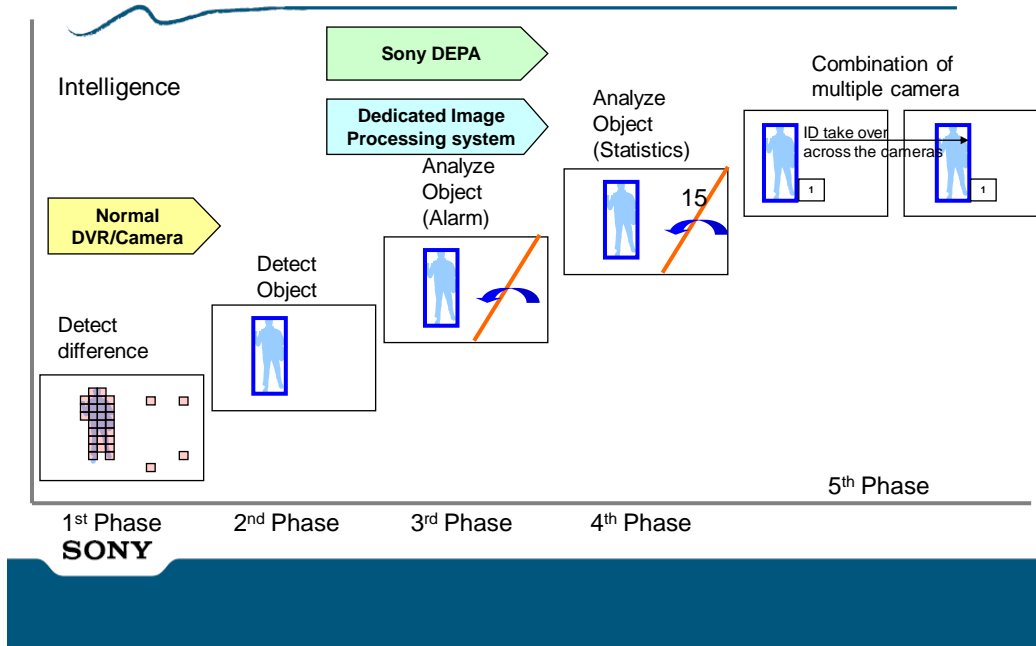
### Distributed Enhanced Processing Architecture

---



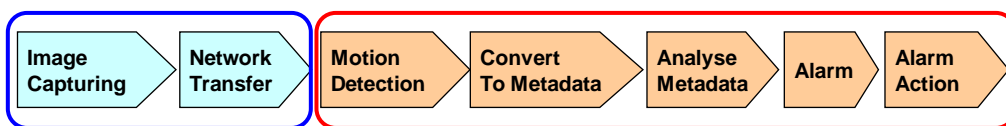
SONY

## Image Processing History

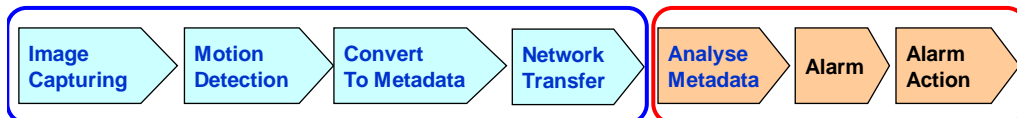


## What's Sony's intelligent video analysis

### Centralised Processing



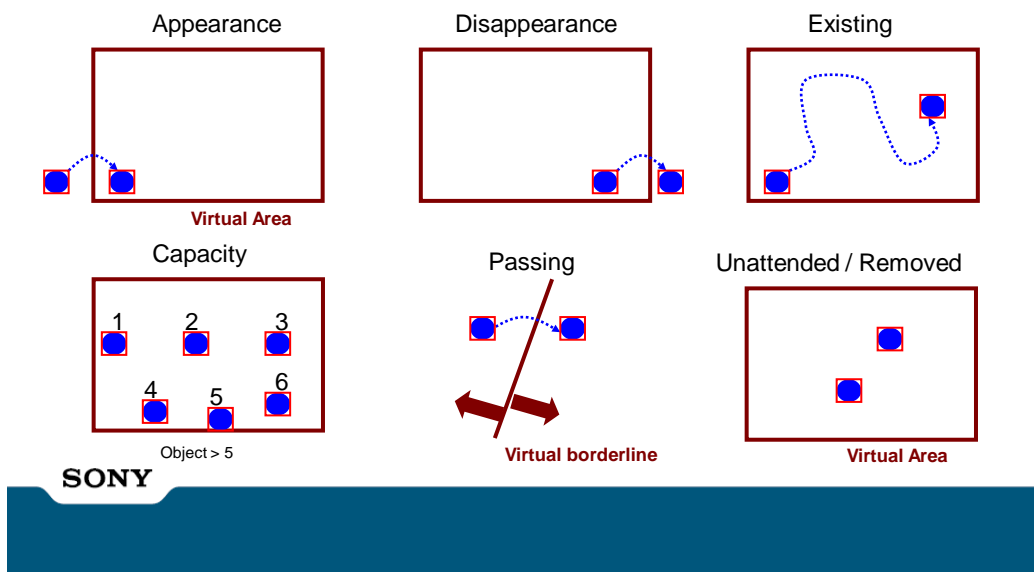
### Sony's Distributed Processing



SONY

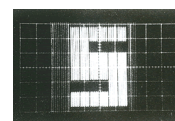


## Video Motion filter (IMD on camera)



## Image sensor & SONY

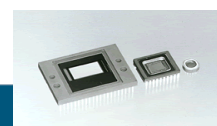
- Sony has been developing CCD since 1970
  - 20 billion yen investment until the 1<sup>st</sup> commercial CCD sensor development in 1978
- World's first CCD camera was produced in 1980 "XC-1"
  - The first application was for a Jumbo Jet to screen taking off and landing into cabin
  - Production line's yield of viable CCD chips at this stage was poor and only one in several hundred was usable
- Sony has been leading image sensor development (CCD & CMOS) in the world



"S" captured by 64 pixel CCD (1972)



World's 1<sup>st</sup> CCD camera "XC-1" (1980)



1 inch, 1/2 inch, 1/4 inch CCD

**SONY**

<http://www.sony.net/Fun/SH/1-22/h1.html>

## Super HAD, Exwave HAD

- Sony keeps developing CCD to gain more sensitivity for low light condition
- No DEPA without perfect image

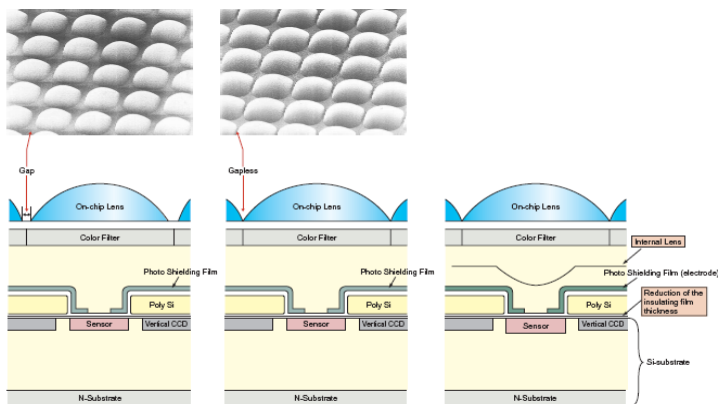


Fig. 1 First-generation On-chip Lens

Fig. 2 Super HAD CCD

Fig. 3 CCD with Exwave HAD Technology

1st CCD

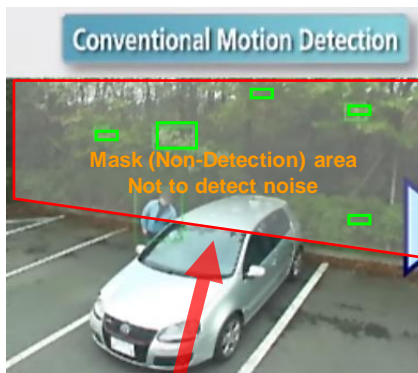
Super HAD

Exwave HAD

SuperExwave

## The BENEFIT of “Intelligent Motion Detection”

Increase security level

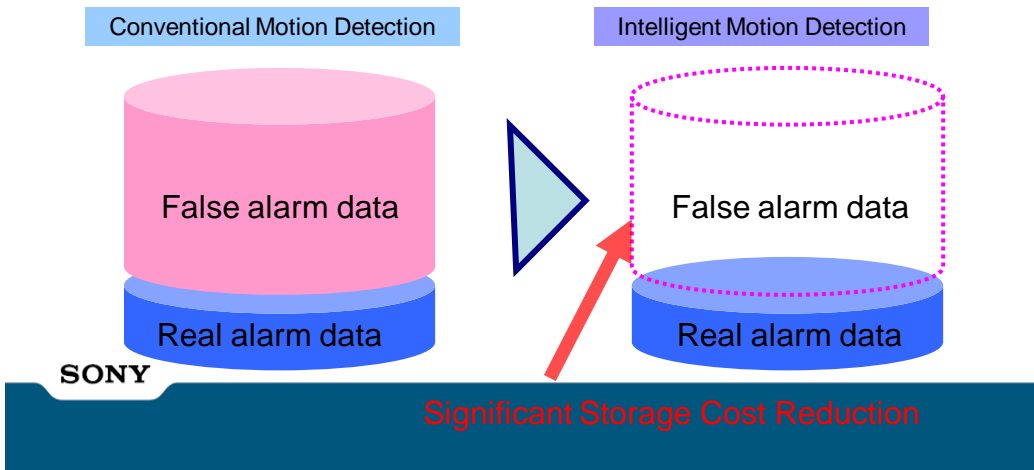


SONY 50% security LOST

100% security KEPT

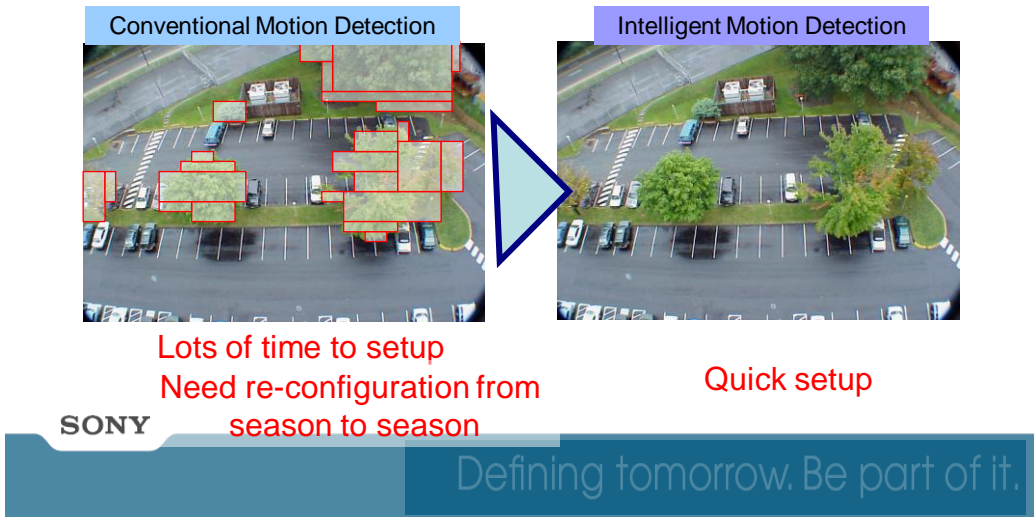
## The benefit of "Intelligent Motion Detection"

### Reduce storage cost



## The benefit of "Intelligent Motion Detection"

### Easy setup

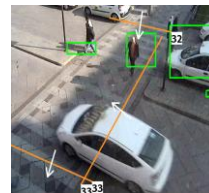


Lots of time to setup  
Need re-configuration from  
season to season

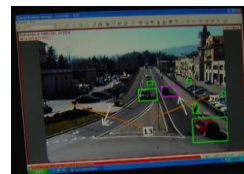
Quick setup

## City of Milan

- Security system & Video conference system
- Key criteria to choose Sony
  - Intelligent Video Analysis
  - Comprehensive product portfolio



Safe Crossing



Car counting

**SONY**

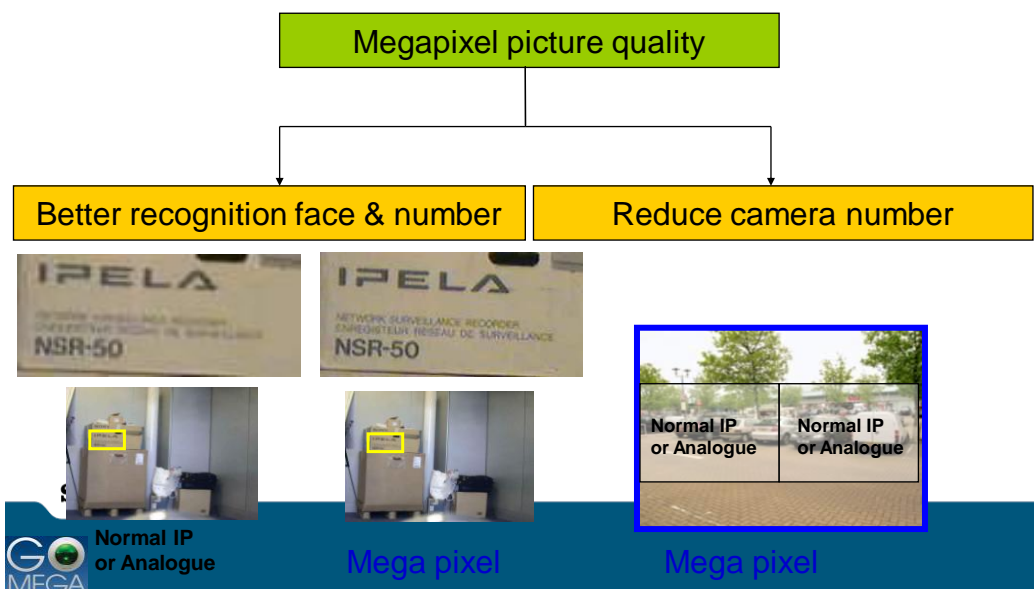
**GO**  
**MEGA**  
DEPA movie

**SONY**  
Designed for Security

**IPELA**  
www.sonybiz.net/nvm

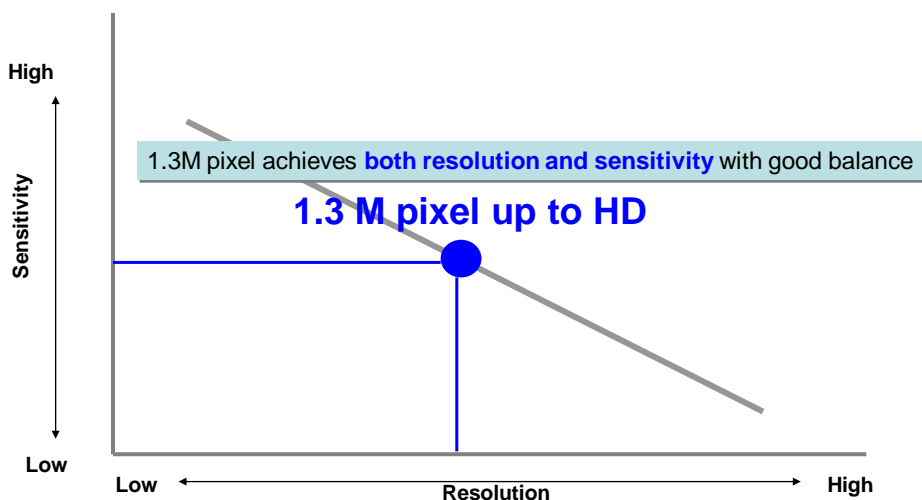
**SONY**

## Benefit of megapixel picture quality



## Resolution / Sensitivity Technology Trade off

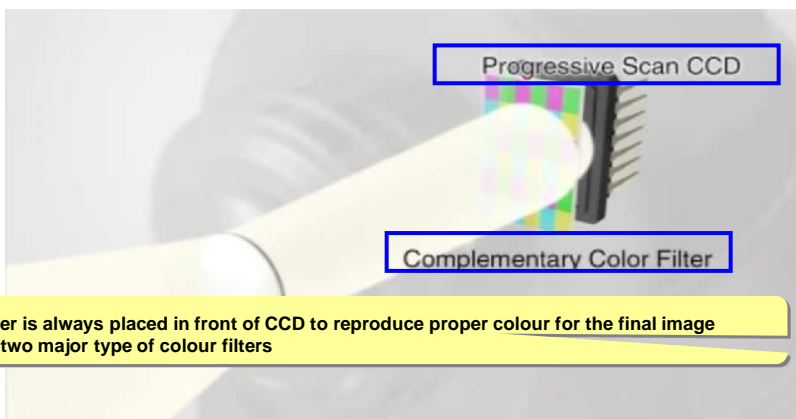
It's a technology limitation that if you increase the resolution, you lose the sensitivity



## ExwavePRO

**ExwavePRO**

ExwavePRO is a **newly developed high sensitive image sensor** even with megapixel camera thanks to the combination of “progressive scan CCD” + “Complementary colour filter” capability

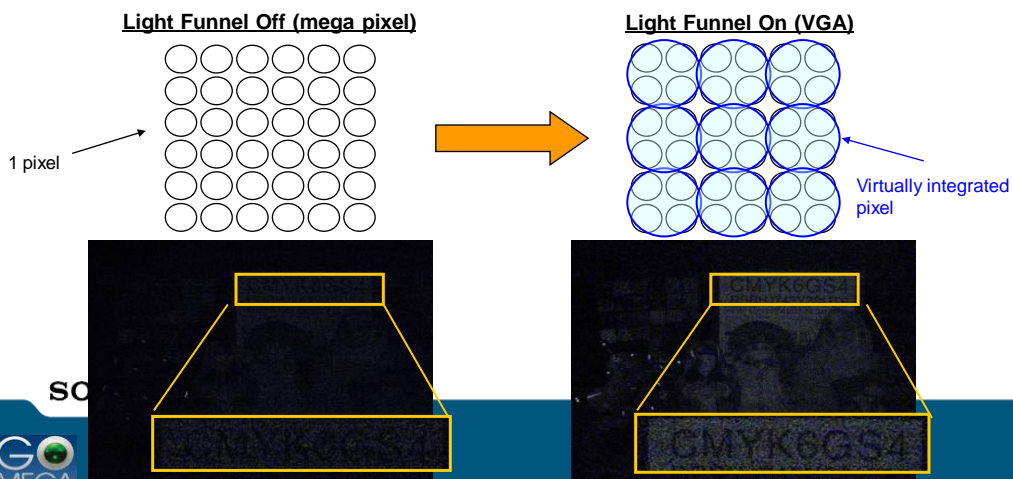


- Colour filter is always placed in front of CCD to reproduce proper colour for the final image
- There are two major type of colour filters

**SONY**


## Light Funnel

- Combine **4 pixels into 1 pixel** to have **x4 times better** sensitivity


**SO**


## Intelligent video analysis with megapixel

Megapixel camera consumes a lot bandwidth and storage



How to reduce bandwidth and storage?



Use **intelligent video analysis** for efficient alarm operation

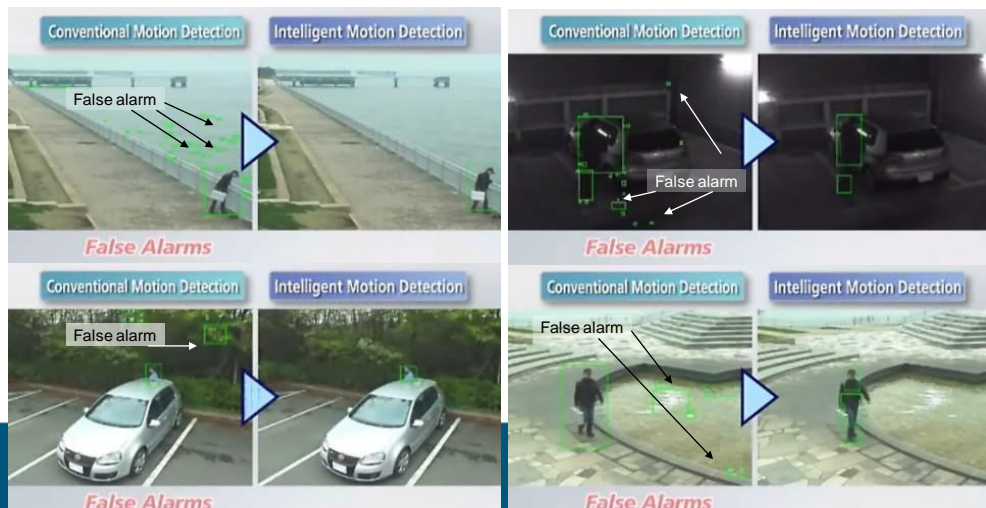
- Intelligent Motion Detection (IMD)
- Intelligent video analysis (DEPA) compatible

SONY



## Intelligent Motion Detection (IMD)

- Strong motion detection capability embedded in camera to reduce false alarm



# World 1<sup>st</sup> HD Intelligent PTZ camera



**SONY**

## SNC-RH124

- World 1<sup>st</sup> HD intelligent PTZ IP camera
- Complete lineup for high resolution with existing megapixel cameras

- HD picture quality
- H.264 / Full Frame
- XDNR (Noise reduction)
- Visibility Enhancer

**HD**

**Superior picture quality**

**Easy installation**

- Easy mounting mechanism
- Hi-Power PoE
- Wireless communication
- Integrated configuration tool (SNC Toolbox)



**Intelligent**

- Intelligent video analysis
- Intelligent audio analysis



Defining tomorrow. Be part of it.

