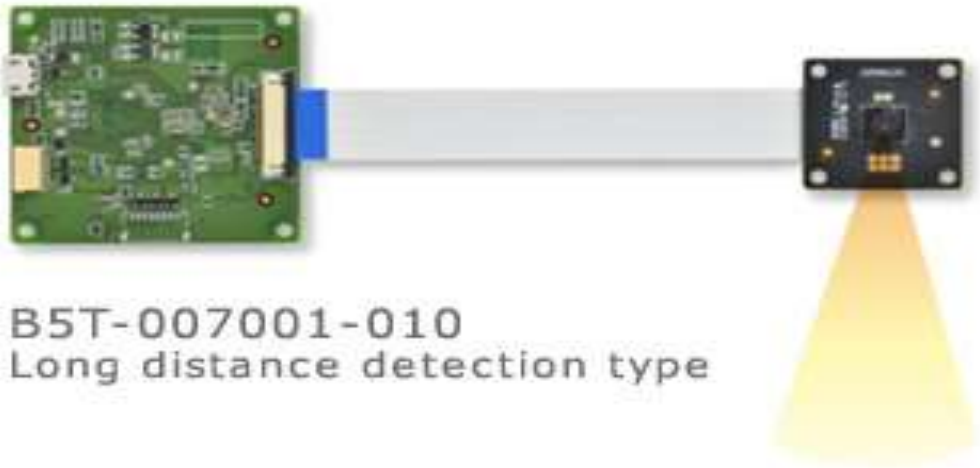
COURSE 1: UNPACKING THE INTERNET OF THINGS.

PRODUCT: Omron Internet of Things Image-Sensing Unit

DESCRIPTION:

Omron debuted the new image sensing unit in August 2016, called HVC or "human vision components" system.

- **This is a built-in human condition recognition unit.**
- **It can detect: expression, age, gender, gaze and blink in a camera module.**
- **It consists of: camera and separate main board connected through a cable**
- **Can be installed on the edge of any flat display unit.**



B5T-007001-010
Long distance detection type

B5T-007001-020
Wide angle detection type

The option is between two camera heads –

- **long-distance detection type**
- **wide-angle detection type**

This can be embedded in equipment and machines to perform various jobs that involve humans and machines.

DEVICE SPECIFICATION:

Item:	Specifications	
	Long-distance detection type (B5T-007001-010)	Wide-angle detection type (B5T-007001-020)
Detection resolution:	1,600x1,200 pixels	1,600x1,200 pixels
Horizontal detection range (angle of view):	54 degrees	94 degrees
Vertical detection range (angle of view):	41 degrees	76 degrees
Size:	Camera board: 25x25 mm; main board: 45x45 mm	

The model has the maximum recognition capability that is 10 times the previous models.

Some example applications:

- **Safeguarding people in manufacturing workplaces**
- **Keeping track of congestion in elevators**
- **Digitalizing people's attention to advertisements including digital signage**
- **Contributing to optimization and development of products for sale from vending machines**

DETECTION DISTANCE

Function:	Maximum distance	
	Long-distance detection type (B5T-007001-010)	Wide-angle detection type (B5T-007001-020)
Body detection:	17 m	8 m
Face detection:	10 m	5 m
Hand detection:	6 m	3 m
Face direction, gaze, blink, age, gender and expression estimation, face recognition:	3 m	1.5 m

(*) Beyond the prescribed distance, detection/presumption accuracy begins to fall.

MAIN FEATURES:

Ten types of functions are available for recognizing human conditions in various perspectives: (1)

A. face detection
B. human body detection
C. hand detection
D. face direction estimation
E. gaze estimation
F. blink estimation
G. age estimation
H. gender estimation
I. expression estimation (five facial expressions: neutral, happiness, surprise, anger & sadness)
J. face recognition

Output image can be chosen from three types:

1. no image output
2. 160x120 pixels
3. 320x240 pixels.

The Problem Solved by this smart connected product:

Digitalizing people's attention to advertisements including digital signage:
The long-distance type of the HVC-P2 can detect and presume attributes of people, including gender and age, as well as their sight line and facial expression from a maximum distance of 3 meters, measuring, for example, the degree of attention people walking through a railway station pay to a digital signage system installed there.

REFERENCES:

www.omron.com