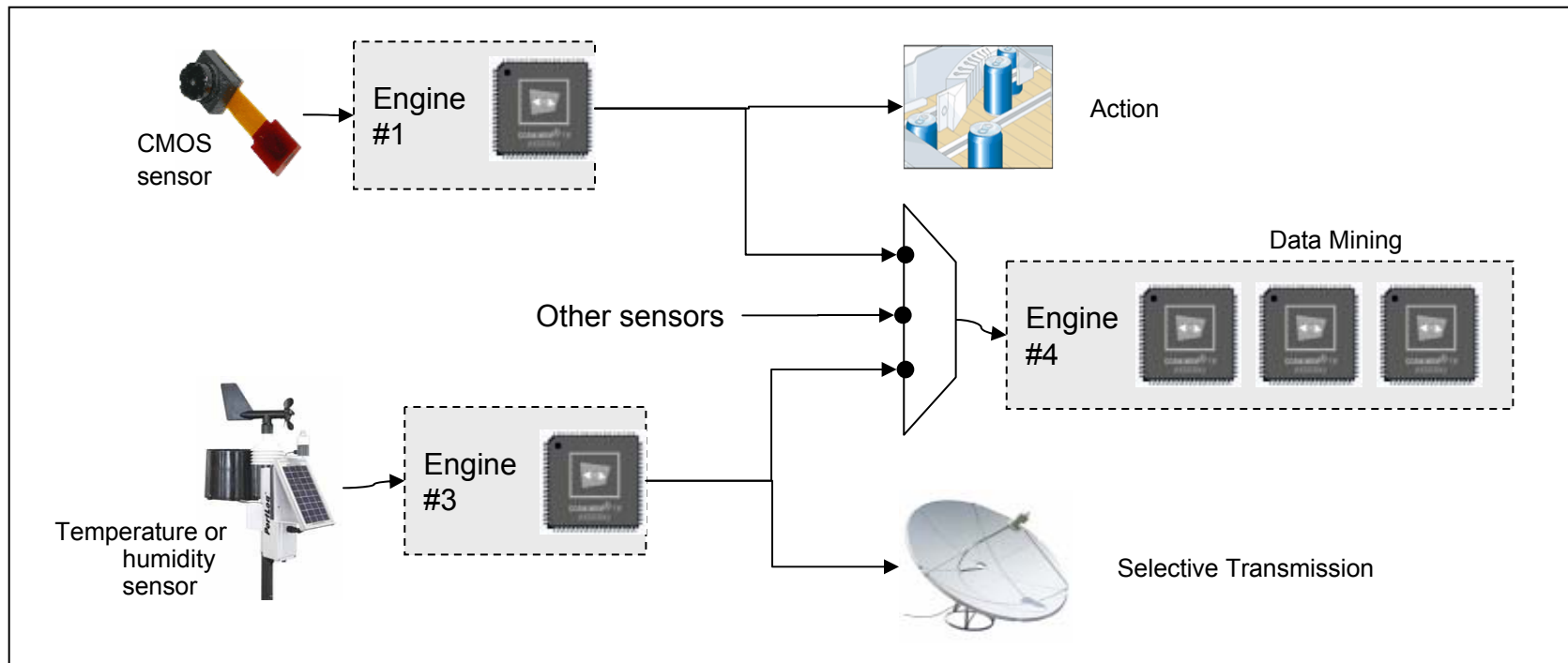


CogniMem, a Cognitive memory chip with endless possibilities from Sensors to Servers

A new dimension of system architecture design can emerge...

...With thousands of neurons directly connected to sensors and performing pattern recognition at sensor speed, low-cost and low power

...With thousand of neurons assembled in parallel to make a pattern recognition server with high-speed performances and low-power consumption

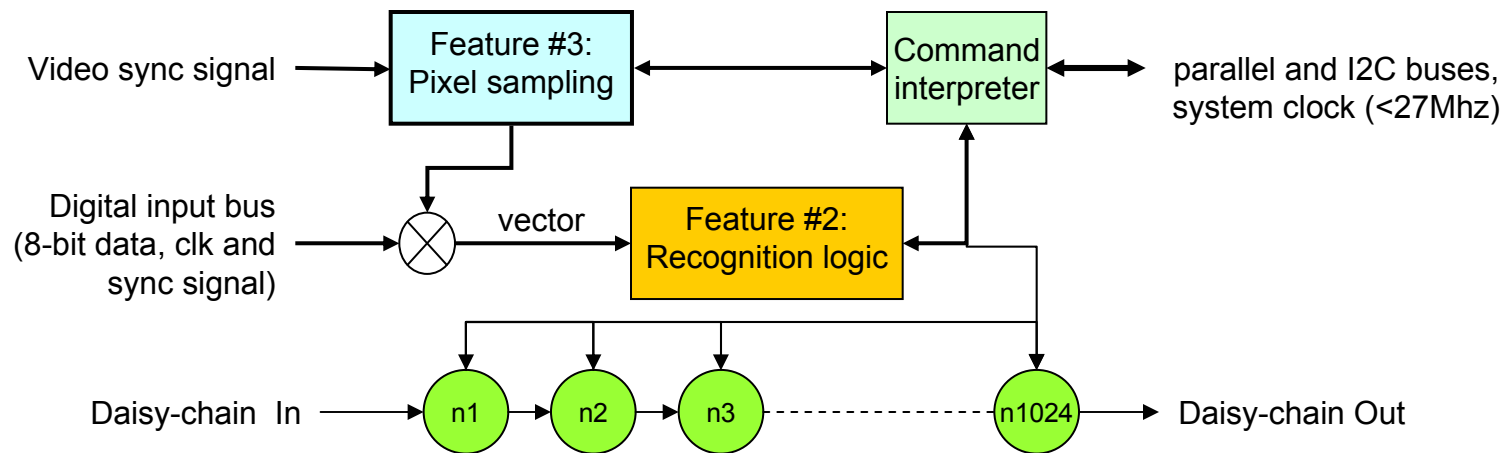
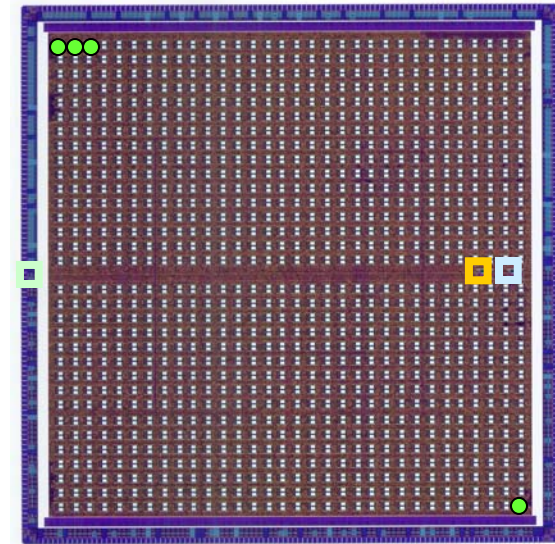


CogniMem inside

Feature #1: neurons arranged in parallel

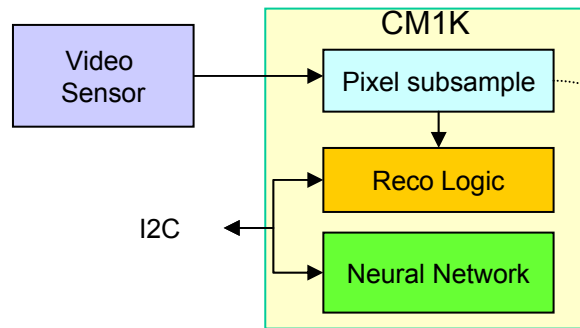
Feature #2: high-speed recognition logic (optional use)

Feature #3: video to vector extraction (optional use)

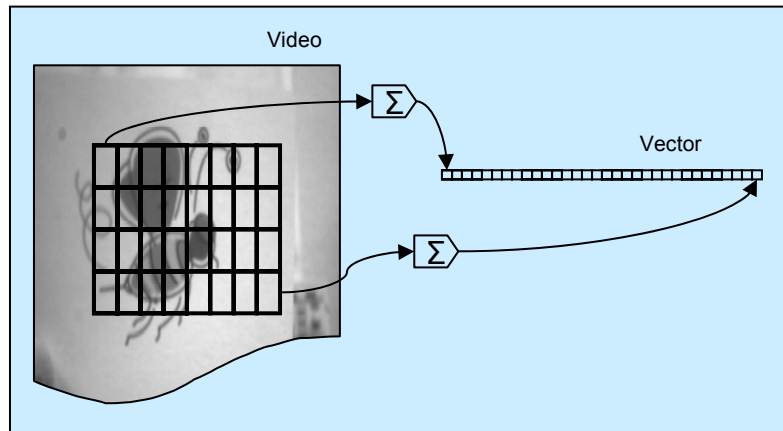
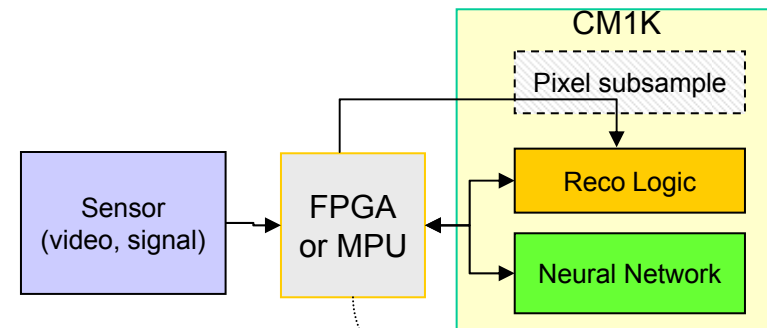


Integrating CogniMem...with sensors

2-chips solution: sensor+CM1K



3-chips solution: sensor+FPGA+MPU+CM1K

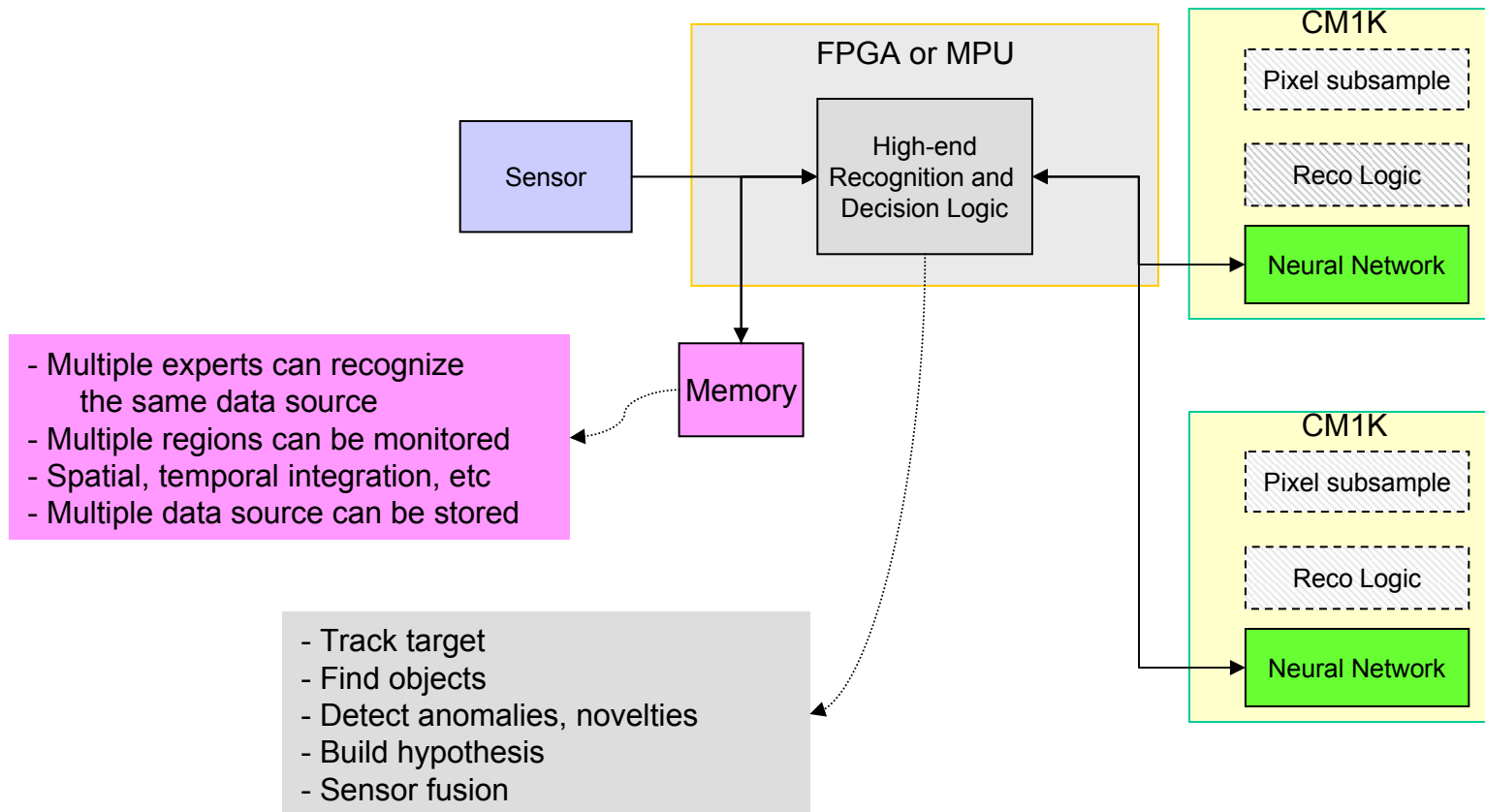


FPGA or MPU = controller

- Feature extraction (s)
- What to look for
- Where, when
- Data formatting and communication

Integrating CogniMem...into embedded devices

4+-chips solution: Sensor+FPGA/MPU+Memory+CM1K(s)

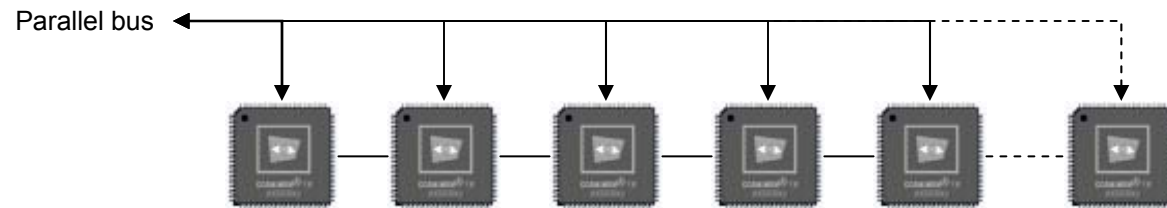


Cascading CogniMems...for data mining

Size your neural network by increments of 1024 neurons

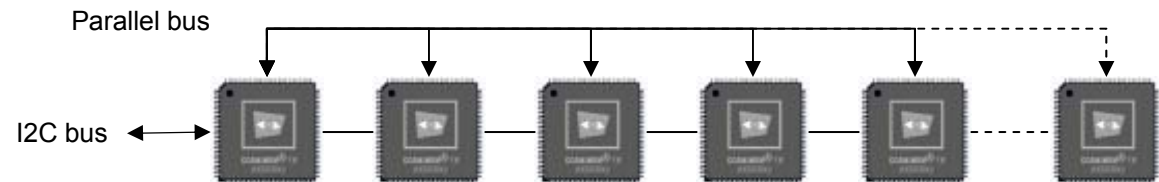
Example #1:

Massively parallel architecture
High-speed comm. with parallel bus (28 lines)



Example #2

Massively parallel architecture
Low connectivity with I2C bus (2 lines)



Example #3

Massively parallel architecture
1st CM1K receives the digital input (11 lines)
And runs its reco-logic

