Seloco, Inc.

Jan, 2014

- MyCAD Business
- Semiconductor Business
- IoE/IoT SOC Solutions

www.seloco.com  www.mycad.com
Seloco Background & History

1975~1989: **KIST, KIET, IC development**
1982~1985: **VLSI Technology, Inc., Silicon Valley**
1985~1989: **ETRI, VLSI CAD Technology**
1990~2004: **Seodu Logic, Inc., 1st Venture by Y.U. Yu**
            MyCAD, ASIC, IMT 2000 chipset for KT
1997~2003: **Seodu InChp, Inc., 2nd Venture by Y.U. Yu**
            WCDMA chip set(WLL), ASIC/SOC,
            Listed in Kosdaq in 2000
2004~2011: **Seloco, Inc., 3rd Venture by Y.U. Yu**
            MyCAD & Semiconductor: inherited from
            Seodu Logic
            IoE SOC & Solutions: new development since 2006
* Seloco, Inc.

- Administration: 1
- Sales & Marketing: 2
- Application Engineering: 0
- R&D: 4

MyCAD, Inc., USA: 1
Advisers/Consultants: 8
Partner Companies: 3
MyCAD Tool Set on Windows

- **MyCAD since 1990**
- **A Complete Tool Set on Windows**: VHDL, Digital Logic, Analog, IC Design (Text books & Education, Universities)
- **IC Layout & Verification**:
  - MEMS, sensor/nano device design
  - TFT LCD & FP sensor design
- **Domestic**: ETRI, SAIT, Samsung Elec/LED, Univ.
- **Overseas**: 3M, NXP, Sanyo, Matsushita, Universities (India, China)
MyChip Station Usage

Layout edit & verification

IC Design
- BFILTER
- DC-AC CONVERTER

FPD, LCD
- AUTO WIRING
- PIXEL ARRAY

MEMS
- SPIRAL
- GEAR
- MOTOR
- COMB DRIVE
MPW & Foundry Brokerage

R&D Prototypes and Pilot Production
- Small quantity Prototype: 10~1,000 samples
- Up-to-Date technologies: 65nm, 90 nm, 130 nm
- Specific Technologies: SOI, SiGe, BiCMOS, Bipolar, GaAs

MOSIS
- A low-cost prototyping and small-volume production service
- TSMC, IBM, AMI
- Since 1991, Seodu Logic & Seloco
- Research & educational institutions

IMEC
- Representing top-class semiconductor foundries
- Europe, Taiwan(TSMC) foundries
- RF, Analog, sensor, etc.

Episil, Atecom Tech
- Epi-wafers, plain wafers from Taiwan
- BCD process for high voltage process
IoE/IoT SOC Solutions Business

- Image & complex sensor IoE/IoT SOC Solution
- Image IoE/IoT Systems Applications
- Potential Customers:
  - OEM, ODM for Sensor module, node manufacturers
  - Sensor module/Sub-systems for Large SI companies
  - Training Systems: MyIoE Platform for Universities and Training Institutes
Sensos Systems In IoE Environment

- Sensos Systems
- In IoE Environment
- Wired/Wireless Router
- WiFi
- Ethernet Hub
- SN100-ZB
- SN100
- SN100
- ZigBee
- SG100S Gateway
- Comm Modem
- Ethernet
- Internet
- ADI
- WiFi Terminal
- Optic
- Office
- Wired
- Home
- Data Center (DB Server)
- Wireless Communication
- Application Service Company
- Smart Phone
- Note Pad
Image IoE SOC & Sensor Node

- **Image IoE SOC, UC5000 R3 in March 2014**
  - Image compression & various sensor control
  - Transmission of Image and sensor values & receiving instructions

- **Image Complex IoE/IoT Sensor Node**
  - Interactive operation of image and multi-sensors
  - Wired and wireless networking: ZigBee, WiFi, Ethernet
  - Low cost, small size, low power, etc.
### Sensos Sensor Node & Sensors

**Temperature & Humidity (SHT11)**
- Temp range: -40~123.8°C; accuracy: ±0.4°C @ 25°C
- Humidity: 0~100% RH; accuracy: ±3% RH

**Distance sensor (GP2Y0A21)**
- 거리범위: 10~80cm

**Luminous sensor (CDS GL5537)**
- Gamma Value at 10~100Lux: 0.7typ

**PIR sensor (D203B)**
- IR receiving electrode: 2×1mm, 2 pcs
- Window size: 5×3.8mm; response spectrum: 5~14µm

**Image sensor (YACBAC1S)**
- Max frame rate: 30fps@VGA
- Output format: YUV 4:2:2, RGB 5:6:5, RGB 4:4:4
- Resolution: 640H X 480V(VGA)

**Smoke Sensor (GSAP61)**
- Sensing gas: HC, Smoke, Organic compounds
- Vout, air: 1.0Volt (sensor voltage 5V)
- error: ±7% (before compensation)

**Pressure (MPXH6115A)**
- Input range: 15 ~ 115 kPa;
- accuracy: ± 1.5 %VFSS

**Touch sensor (TS08P)**
- capacitive

**Temperature (LM35D)**
- Temp range: -55~+150°C
- accuracy: 0.5°C @ 25°C
MyIoE Platform: Development & Education

- IoE Platform for Development, Education & Training
- 1 Gateway Platform + 3 Sensor Nodes
- Good for image sensor network system development
- Good for the training of USN Systems at Universities & Training Centers

Lab Book

MyUSN Station Platform

Sensor Nodes, SN100
SN100 Sensor Node Housing

- Distance sensor
- Image sensor
- Light sensor
- PIR sensor
- Light LED
- Microphone
- Speaker
- I/O connector
  - UART (1)
  - Sensor_In (1)
  - Alarm_Out (1)
- Locking hole
- Power connector
- Ethernet connector
- Mode SW
- Reset SW
SENSOS, Image IoE System

- **Surveillance, Monitoring**
  - Complex Sensors: Distance, Moving with Image
  - QVGA, VGA
  - ZigBee, WiFi, Wired Ethernet

- **Individual Auto Recognition Parking Management System**
  - Sensing distance and capturing image
  - Sensor node at each parking spaced
  - Auto-plate recognition and reading

- **MyIoE Platform: IoE Edu. & Dev.**
  - Image & 8 kinds of sensors
  - IoE sensor basic, sensor network, server program
  - Lab/Workbook for IoE System
Individual Car Recognition

- Individual car recognition in the parking zone: SN100 for each car
- Composite sensors to detect approaching car and to transmit plate image
- Central parking management system for the car plate number recognition and management
- The car owner can locate his car at any place of the big parking lot.
Live, Online Social Network

- Many SN100 nodes at one place for online sensing and viewing: Sightseeing, historical sites
- Live, real-time images, temperatures, moving, climates: sharing in a communities

Sea coast, Trails, etc.
Traffic, Highway
Traditional Market

Phone
Pad
PC

3G, LTE
WiFi

Server (Data Center)

Sightseeing, Historical sites, etc.
Sensos Applications for IoE

- **Security**: Door, stairways, etc. of house, apartment, etc.
- **Security**: Public places, streets of school, bank, building, etc.
- **Surveillance**: Industrial facilities, warehouse,
- **Surveillance**: Pets, Farms, Ranches, forests, environment, etc.
- **Protection**: Moving detection, disguise detection, etc.
- **Protection**: seniors, disabled, children, etc.
- **Management**: Parking Lot management with individual car recognition, Office management, etc.
- **Management**: Park, public facilities, etc.
- **Convenience**: Analog meter reading of gas, electricity, water consumptions, etc.
- **Convenience**: Remote real-time online images of park, sightseeing attractions, etc.
- **Extended Applications in IoE applications**: Image for the existing IoE/USN, downsizing of existing DVR & NVR applications, etc.
Seloco Business

- **MyCAD**
  - Layout tools for IC, MEMS, diode, display, nano device
  - Electronic tool set for Education: VHDL, analog/digital circuits

- **IoE/USN SOC Solution**
  - Smart IoE/USN SOC Solution
  - IoE/USN Applications

- **Semiconductors**
  - MPW by MOSIS & IMEG
  - Wafer & Foundry: Epil
   MyCAD Tool Set, IoE/IoT SOC Solution & IoE Systems Development
   WCDMA/WLL Chip Set Development, DSTB ASIC, Xilinx 판매
3. Seodu Logic, Inc.: President & CEO (1990-2004), 1st Venture
   MyCAD EDA Tool Set, ASIC Design, IMT-2000 chip set development
   One of the leading EDA companies (merged into Cadence, 1992)
5. KIST, KIET, ETRI: Technical staff, Director(1975-1989)
   Audio & IF Amp (the first IC in Korea), PCM Repeater IC (the first commercial IC in Korea), 4-bit MCU, 8-bit MCU, Management of National MPW IC Development,
   Mega Cell Development (VTI, DC), Management of VLSI CAD Development Project
6. KAIST, Majored in Electronics Engineering, Semiconductor, (1973~1975)
   Hanyang Univ. Majored in Electronics Engineering(1965~1973)