YONGATEK Microelectronics

ASIC/FPGA Design and Verification Company

Basri Serdaş

Software Development Director
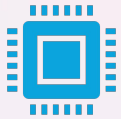
basri.serdas@yongatek.com

Company at a glance

YONGATEK Microelectronics

ECS BROKERAGE EVENT

Turkiye's Chip Design Center
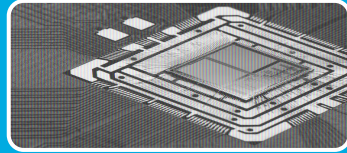
Founded in 2014

70+ People

Headquarter : Istanbul
Office : Ankara

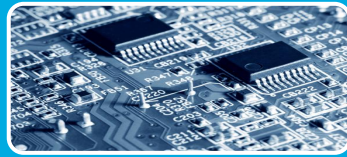Global Service & Delivery 10+ Country

2 patented products

Digital Design and Advanced Verification
- ASIC & FPGA Design and Verification, RISC-V
- DO-254 Avionics Compliance, Advanced UVM Verification

Electronic System Design and Verification
- System Architecture and PCB Design, Firmware/Software Design
- System Integration, Test and Verification

Computer Vision and Real Time Image Processing
- C++ / OpenCV / Cuda / OpenCL Algorithm Development and Optimization
- Hardware implementation on CPUs / GPUs / FPGAs

Communication
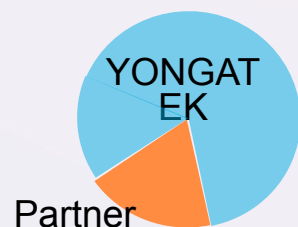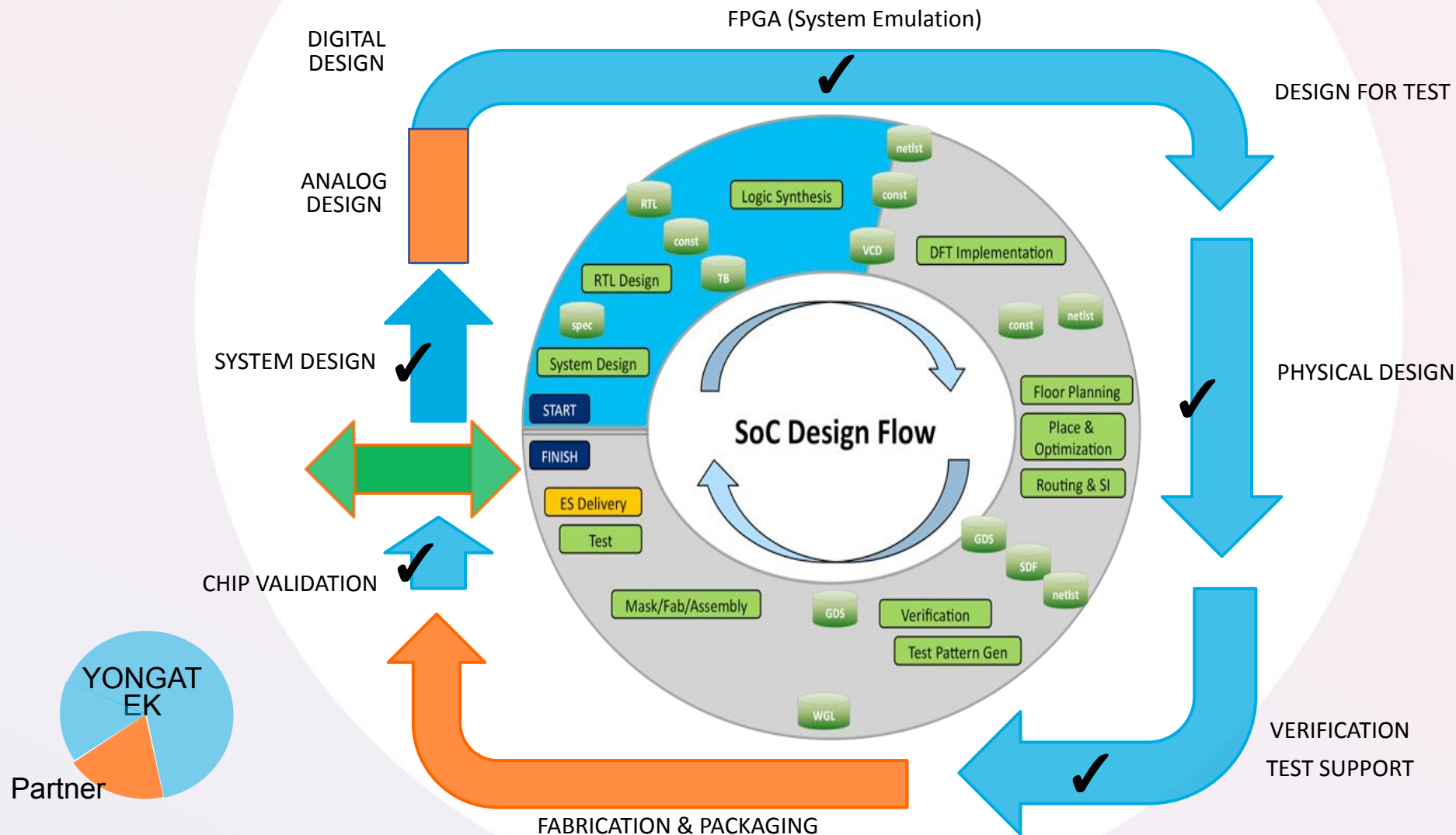- WLAN, Bluetooth
- SATCOM, 5G, LDPC, MIMO

IoT & Automation
- Preventing Maintenance, Industrial Automation, Quality Control
- Bluetooth, NFC, Lora, RFID, sensor networks
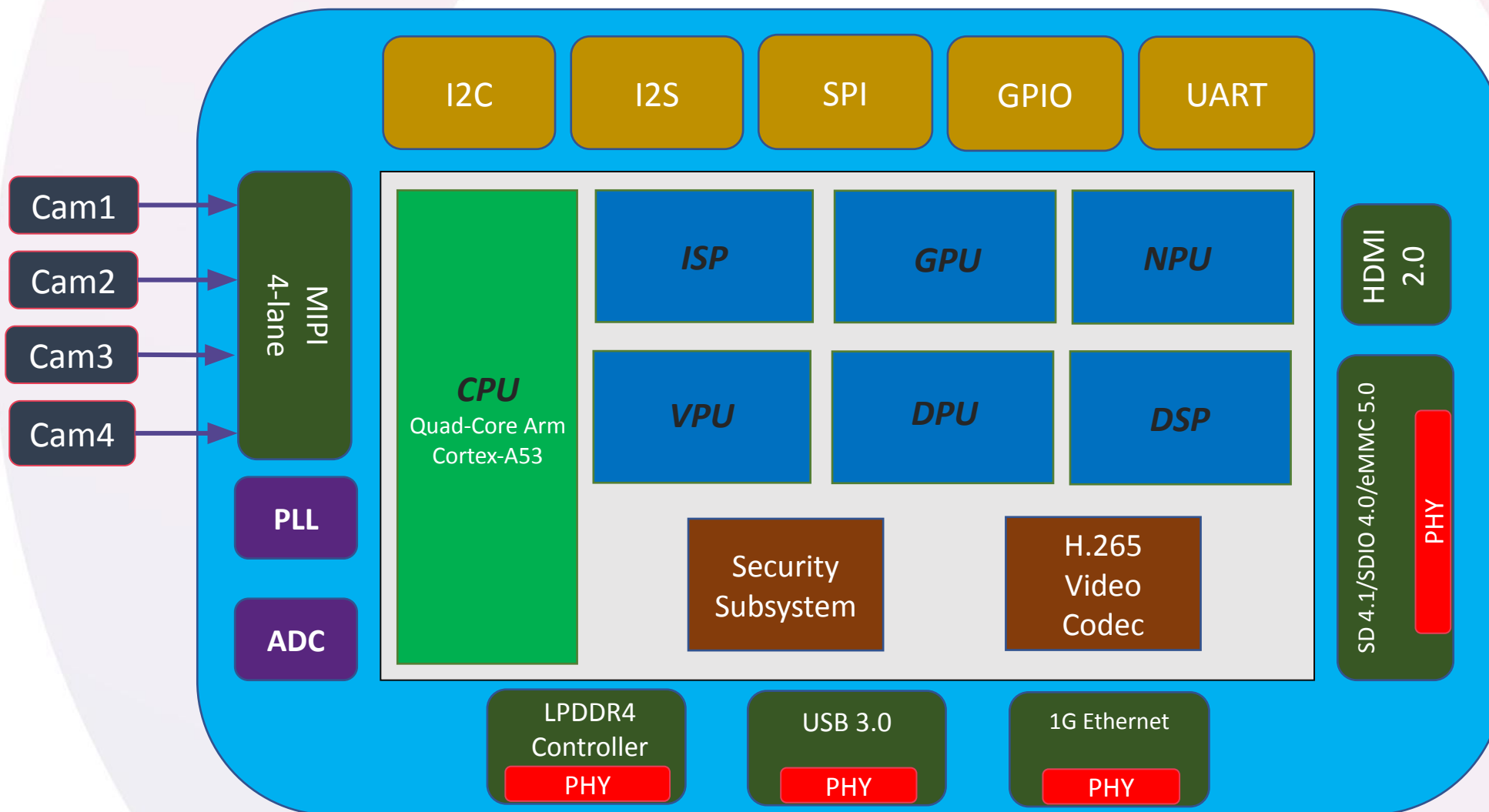
ASIC Design Competence

Products – KIVA:
KIRMIK 2.0 Intelligent Video Analysis SoC

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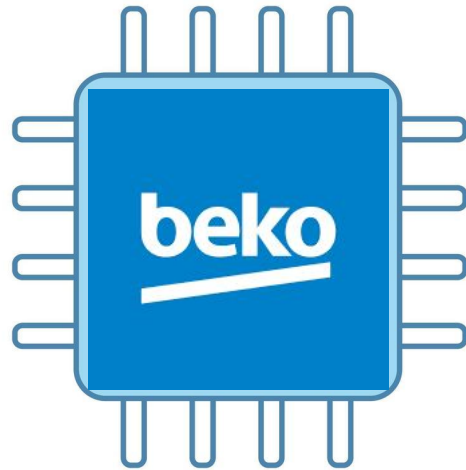
ECS BROKERAGE EVENT

- AI Based Smart Camera SoC
- TSMC 12 nm
- 4x 4K @30 fps video
- H.265 Video Codec
- 4 core CPU
- ISP, DSP
- NPU, GPU, VPU, DPU
- 4x MIPI interface

Target Tape-out @ 2026.Q3

Products – ÇENTİK RISC-V MCU

- Under design for **BEKO** which is the **largest** home appliances manufacturer company **in Europe**

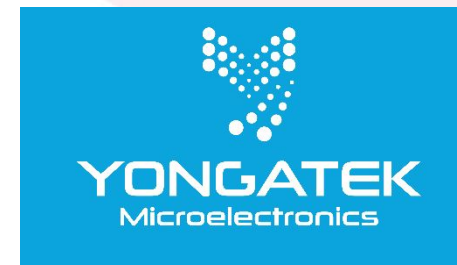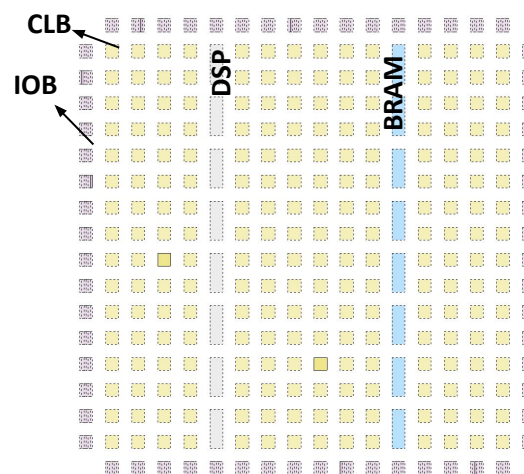- TSMC 40 nm

- 30 million chips per year

Target Tape-out @ 2026.Q2

Products – SAKA v1.0:
Inhouse Developed FPGA

- RISC-V CPU core

- Heterogeneous architecture with Block RAMs and DSP units

- Block RAM with 1 kB memory units (BRAM)

- 18x18 hard multiplier units (DSP)

- TSMC 40 nm technology production

- 16x16 Tile-Based Complex Logic Block (CLBs)

- 8 Logic Elements (LE) inside each CLB

- 4-input Look-up Table (LUT4) and FF inside each LE

- Fracturable LUTs to allow multi-output in LUT

- ~400 General-Purpose I/Os

- OpenFPGA EDA framework for Synthesis, STA, P&R and bitstream generation

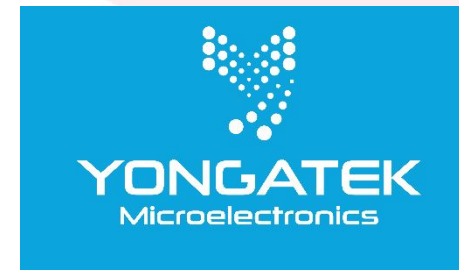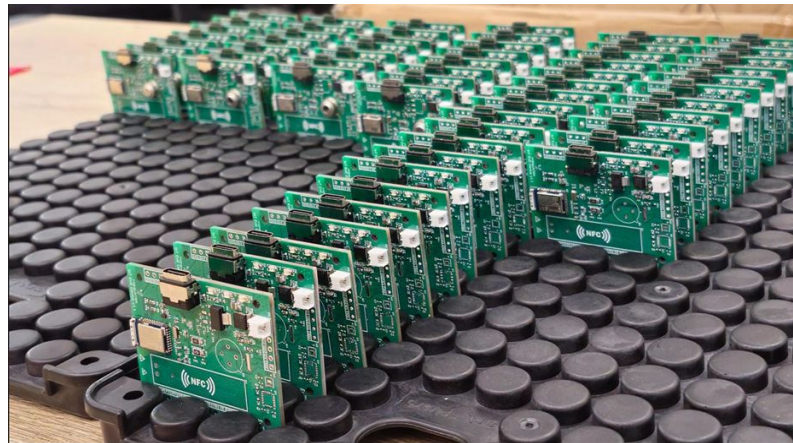- Benchmarking through numerous RTL designs

Target Tape-out
@ 2026.Q2

Products – FABIoT:
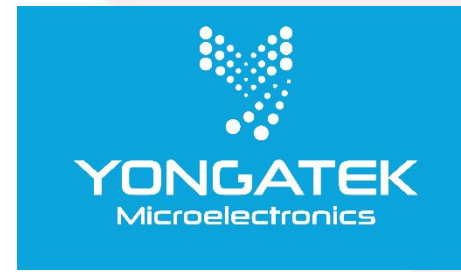# AI-Driven Predictive Maintenance System

- Integrated multi-sensor data (temperature, humidity, vibration, magnetic, RFID, ultrasound, camera etc.) with
- Bluetooth and NFC connectivity
- Wi-Fi/4G/5G gateway access,
- AI-driven cloud-based predictive intelligence for automatic decision-making and real-time performance optimization.
- Use Cases;
  - o Conveyor Belt Health Monitoring
  - o Industrial Automation for manufacturing

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Company's Activities
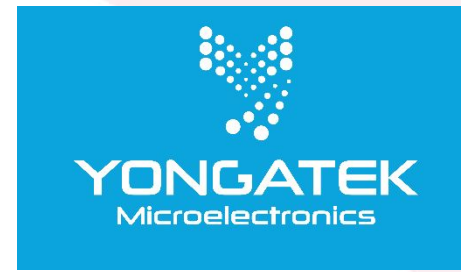
- Is there any previous experience with collaborative projects?
    - **TRISTAN** (2022-2026) – WP Leader
    - **LoLiPoP IoT** (2023-2026)
    - **RIGOLETTO** (2025-2028) – WP Leader

- What sort of interaction exists with one of the 3IAs or other ETPs?
    - Member of EPoSS
    - Member of EPoSS/INSIDE Edge AI Working Group

Collaboration Expectations

Collaborative project of interest to you	*Chips JU, Horizon Europe, Eureka Clusters and Eurostars*
Scope	*ASIC/FGPA Design/Verification and Embedded Software Development for many domains like AI, Communication, Computer Vision, Cyber Security, IoT.*
Project idea	
Project impact	
Project consortium	*We are eager to be part of project(s) where we can create value with our expertise*

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Contact:

www.yongatek.com
info@yongatek.com

İstanbul Office:
Teknopark İstanbul
Sanayi Mah. No:1/9
Kat:3 34906
Pendik, İstanbul /
Türkiye
+90 216 504 14 10

Ankara Office:
Kızılırmak Mah. İlki YDA Center,
A blok 9. 349 Ofis,
06510 Ankara

THANK YOU