Edge Computing—A Part of IoT

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Agenda

- Role of Edge Computing
- SoC FPGA Solution for Edge Computing
- Edge Computing GW and IoT Solution
- Summary and Next Step
Role of Edge Computing

Edge Computing Accelerates Response Critical Market

Role of Edge Computing: Value

- Upload data downsizing
- Response time
- Absorbing several I/F
- Security and manageability
- Flexibility and upgradability
- Cost

... Technically, no question. Monetization is the key to balance profits vs. data value
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SoC FPGA Solution for Edge Computing

Optimization using SoC FPGA can offer the best of class cost/performance on edge computing.
SoC FPGA Solution for Edge Computing: Case Study

Sensing Data (5.4TB/Day)

Data Cleansing
Filtering
Transform

Valuable Data (<0.08TB/Day)

SoC FPGA Offloading 1000 : 15
SoC FPGA Solution for Edge Computing: Case Study Details:

- Vibration data: 10K points/sec
- Getting multiple frequency factors by frequency analysis
- Peaks of specific frequency factors

1. Re-sampling for fast Fourier transform (FFT)
2. Singular data filtering
3. Window function for FFT
4. FFT

- Extract specific frequency data
- Perform data cleansing
- Minimize data size

Effective Approach: FFT Processing by FPGA
SoC FPGA Solution for Edge Computing:
Advantages of SoC FPGA Edge Computing GW

SoC FPGA Edge Computing GW Enables Real-Time, Customizable Configuration Usage
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Worker’s mental and vital healthcare is a critical issue
Edge Computing GW and IoT Solution:
Demo platform overview

Demo: FUJISOFT* Can Offer Total IoT Integration
Edge Computing GW and IoT Solution:
Demo: Target Spec. of SoC FPGA Edge Computing GW

Join in the FUJISOFT* project development and trial! FUJISOFT offers custom features at minimum initial cost
Edge Computing GW and IoT Solution: Architecture

FPGA as the hardware offload engine
FUJISOFT* offers custom features at minimum initial cost
SoC FPGA Solution for Edge Computing:
Vision of SoC FPGA: Genetic IoT Solution

- Balanced loading
- Self feedback
- OpenCL*
- Hardware re-program
- Frequent update

SoC FPGA: Re-configuration optimization through deep learning

Deep Learning
- Accelerate processing through FPGA offload
- Load separation and parallel processing through edge computing GW and Cloud
Edge Computing GW and IoT Solution: FUJISOFT Solution and Plan

Total Support of Edge Computing GW Solution 1H 2017

FUJISOFT: IoT Integrator from Design to Cloud
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Summary and Next Steps

- Edge Computing accelerates response-critical IoT market
- SoC FPGA Edge Computing GW enables real-time and customizable configuration usage
- Vision: Genetic IoT solution through Deep Learning and SoC FPGA
- FUJISOFT* is the IoT integrator from design to Cloud

Next Step:
Accelerate SoC FPGA solution in IoT segment with FUJISOFT.
Please contact me (et-solution@fsi.co.jp).
Edge Computing GW Solution 1H 2017

Join us! FUJISOFT