Minutes of meeting Dec-03

1. Seed code release date of NNAS (End of Jan)
2. Provide feedback loop in NNAS, Define SDK inference API
3. More technical discussion will be done in Next call.
4. Balena features need to be suggested to Projec EVE.
5. Intel collaboration for inference engine, Project EVE & Data Storage (Edge X foundry) status will be updated in next call.
6. High level architecture of NNAS discussed.
7. Feasibility of Balena and EVE were shared across members.
Balena Ecosystem for Code deployment and use.

1. Code is submitted to the git server (Balena Platform)
2. Builders build the docker image
3. Docker images stored in our container registry,
4. The device supervisor (Balena OS) manages the pull and push of images

ISSUES:
Devices need to have Balena OS for using the Balena runtime. Tight dependency on Balena OS

Home-Edge supports devices with Linux OS

Balena container runtime support without Balena OS ??
Project EVE Compatibility with Home-Edge Architecture

Type 1 Hypervisor

*Project EVE*

EVE provides type-1 Hypervisor Support.

Type 2 Hypervisor

Edge orchestration requires Type-2 Hypervisor.

Will EVE provide any support for Type-2 Hypervisor ??
Our Understanding for EdgeX

- Uses MongoDB for data storage
- Core-Metadata stored device info
- Core-data stores sensor data
- Has master-slave concept
- Core-command facilitates and controls actuation requests
- Device service interacts with actual device
- Export Service transport data to cloud

Requirement for Home Edge

- Uses Bolt Db for data storage
- No master-slave concept
- All devices connected peer to peer
- Minimal data is stored at the devices
- Data cannot be shared between the devices
- Model can be shared
- Metadata needs to be aligned to the model
NN Compiler

MIL Framework

nn2circle

ONNX Model

On-Device AI Application

TensorFlow Lite API

TensorFlow Lite

NNFW Native Frontend

Custom operations manager

NN Package loader

Android NN API Front-end

Compliant IR

Compiler

TF Importer (moco-tf)

ONNX Importer (moco-onnx)

Optimizer of loco IR

Loco IR Verifier

Common IR exporter

Packager

Interpreter (Locomotiv)

Runtime Core

Interpreter

Profiler

Scheduler

Memory Manager

Execution Manager

Backends

ACL (OpenCL)

ACL (NEON)

Pure ARM CPU

Custom kernels

Hardware

CPU

GPU

Developer PC

Target Device
- Collaboration with EdgeX: https://github.com/lf-edge/edge-home-orchestration-go/issues/74
- Collaboration with EVE: https://github.com/lf-edge/edge-home-orchestration-go/issues/72
- Collaboration with Balena: https://github.com/lf-edge/edge-home-orchestration-go/issues/73