Scenario 3: Transportation

Below is the third scenario. Again, your job is to read through the scenario and figure out which type of hardware might best fit the client's needs.

The Scenario

Ms. Leah is the Innovation head for Delhi Metro Rail Services. Delhi Metro is an urban passenger transportation system connecting Ghaziabad, Faridabad, Gurgaon, Noida, Bahadurgarh, and Ballabhgarh in the National Capital Region of India. Delhi Metro makes 2,700 trips every day and is one of the busiest metros in India.

During peak hours, some areas of the platform get highly congested, while other areas remain relatively open. In some cases, passengers trying to board in the more congested areas are unable to get on, even though there is space on the train.

Currently, this congestion is handled manually by door operators, who help direct passengers to less congested areas during peak time. Ms. Leah would like to automate this using an Edge AI system that would monitor the queues in real-time and quickly direct the crowd in the right manner.

In peak hours they currently have over 15 people on average in a single queue outside every door in the Metro Rail. But during non-peak hours, the number of people reduces to 7 people in a single queue. On office hours there is a train every 2 mins. However, on the weekends the time increases to up to 5 mins since some of their drivers work only 5 days a week.

They monitor the entire situation with 7 CCTV cameras on the platform. These are connected to closed All-In-One PCs that are located in a nearby security booth. The CPUs in these machines are currently being used to process and view CCTV footage for security purposes and no significant additional processing power is available to run inference. Ms. Leah's budget allows for a maximum of $300 per machine, and she would like to save as much as possible both on hardware and future power requirements.

And here's the last scenario! This will work just like the last two:

Task List

- Read through the scenario and identify relevant information.
- Identify which hardware (CPU, VPU, or FPGA) would potentially meet the client's needs.
- Note your proposed hardware in the proposal document, and describe how this hardware matches with the client's requirements.