

# Theme : Big Data & Network

## Subject : Device Centric Data Stream Management for Wearable/IoT Devices

### Introduction

The accelerated growth of the “Internet of Things” (IoT) is driving demand for increased capabilities to collect and process data from a variety of devices. At the same time, the quantity and speed of the events is growing exponentially. Customers in multiple industries must handle large volumes of complex data in real time. The goal of this research project is to make a lightweight framework for mobile data stream management in IoT environment. We expect the new framework to enable innovative service in new computing environments

### Scope

Technical challenges include:

- Methods to extract meaningful information from large-scaled data
- Methods to avoid unnecessary data transmission and/or save
- Methods to enhance the performance of multiple data stream processing
- Methods to supports various source data formats

### Research questions

We are interested in the following research questions. These questions are not exhaustive but different research questions are open to discuss with research partners.

- How to manage efficiently the constraint resource (memory, power consumption, network bandwidth, computing power and so on)
- How to solve the major issues in data stream processing in mobile environments: data stream mining, data stream OLAP and continuous query processing
- What kind of service would be suitable for decentralized data stream management?

### Expected Deliverables

The following is open to discussion:

- Detailed progress report every six months
- Joint publication in scientific / engineering / medical journals and conferences with Samsung Electronics
- Prototype, system, architecture sample or demo
- Patent with Samsung Electronics