High Level Requirement

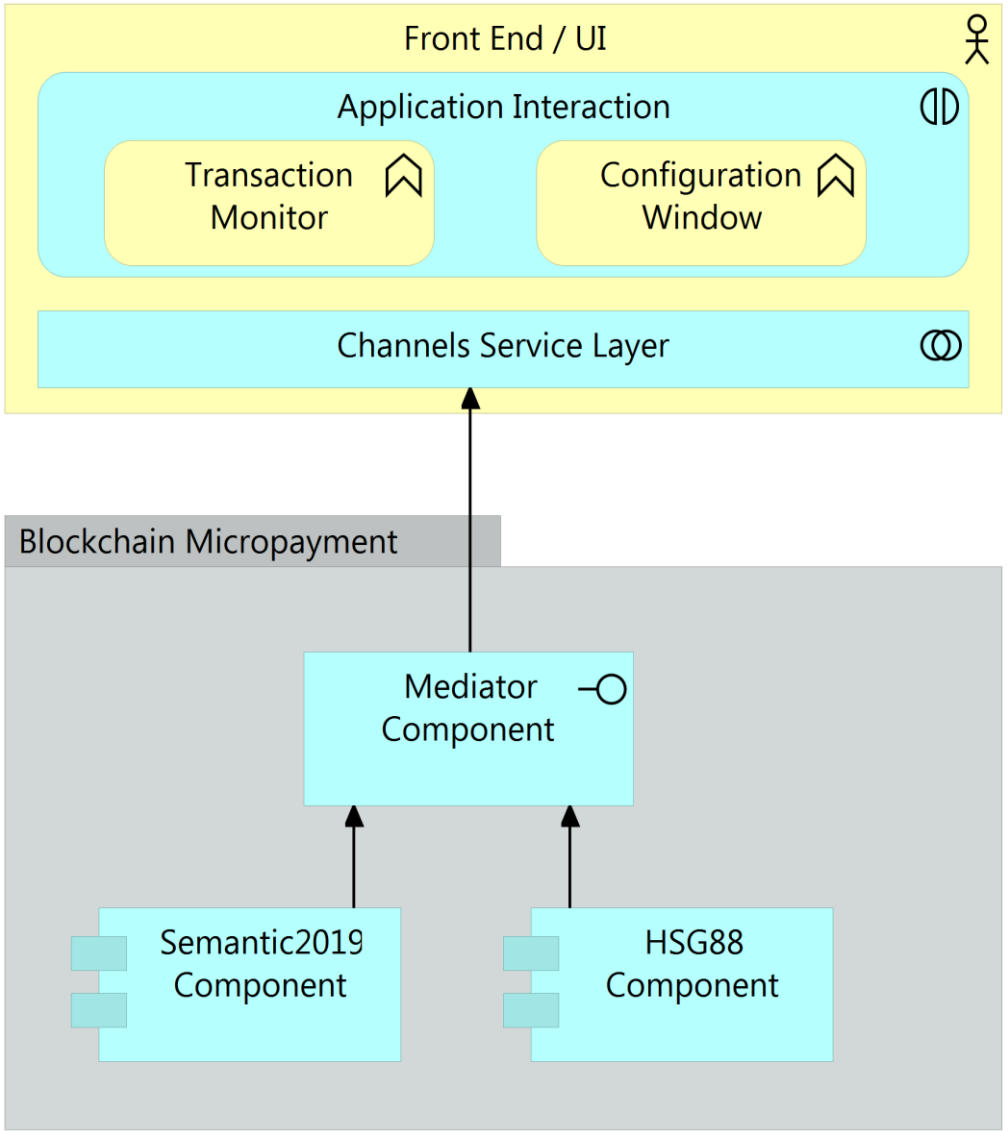
During thesis work, we plan to develop blockchain application that able to run in IoT environment. There are 3 component to build this system. The main component refer to 1,2 and new component refer to 3. Short description of this component, as follow:

1. **IoT with Linked Data, source available at: https://github.com/anhlt18vn/Semantic2019. The current role of this component it's running the overall system including blockchain component. In future this blockchain will be remove and replace with component in number 2 (HSG88 / Payment-Channel).**
2. **HSG88 / Payment-Channel will be modified so existing blockchain feature that exist in Semantic2019 will be deprecated and replace with HSG88 modified component. Source: https://github.com/HSG88/Payment-Channel**
3. **To enable component to component call we will develop new integrator, we call as "Mediator Component". This component will serve also as service router to get the business feature from Semantic2019 and HSG88 component.**
4. **Once the "Mediator Component" work properly, we can test using command program for some routine such as payment or added new data source for configuration purpose.**
5. **Additionally, the system also required to run on IoT environment, in this case simulation for IoT environment will implement using Mock Device. Source for IoT Mock available at: https://github.com/OpenFogStack/MockFog2**
6. **Finally, if all component work properly, we come to develop simple Front End application that enable participants monitoring their payment or modified their system (e.g., Inserting Linked Sensor Data, Querying Dataset, Inserting Payment Data, Monitoring Payment Transaction).**

To build the above system, strong Java & JavaScript developer required to work together to develop the application.

As highlight this work is part of thesis research (seminar dissertation), the system develop is not for commercial propose.

Integration Component



1. **Front End**

2. **Channel Service Layer**

   Channels are only a delivery layer, containing those functions necessary to manage delivery, while providing an appropriate client experience,

   All processing components should be available as services from underlying systems.

3. **Mediator Component**

   Expose 2 core Services as APIs allowing multiple Front End to consume the same set of business services that covers enquiries, configuration and transaction services for Semantic and HSG88.

4. **Semantic2019 (without Blockchain)**

5. **HSG88 (enhance component)**

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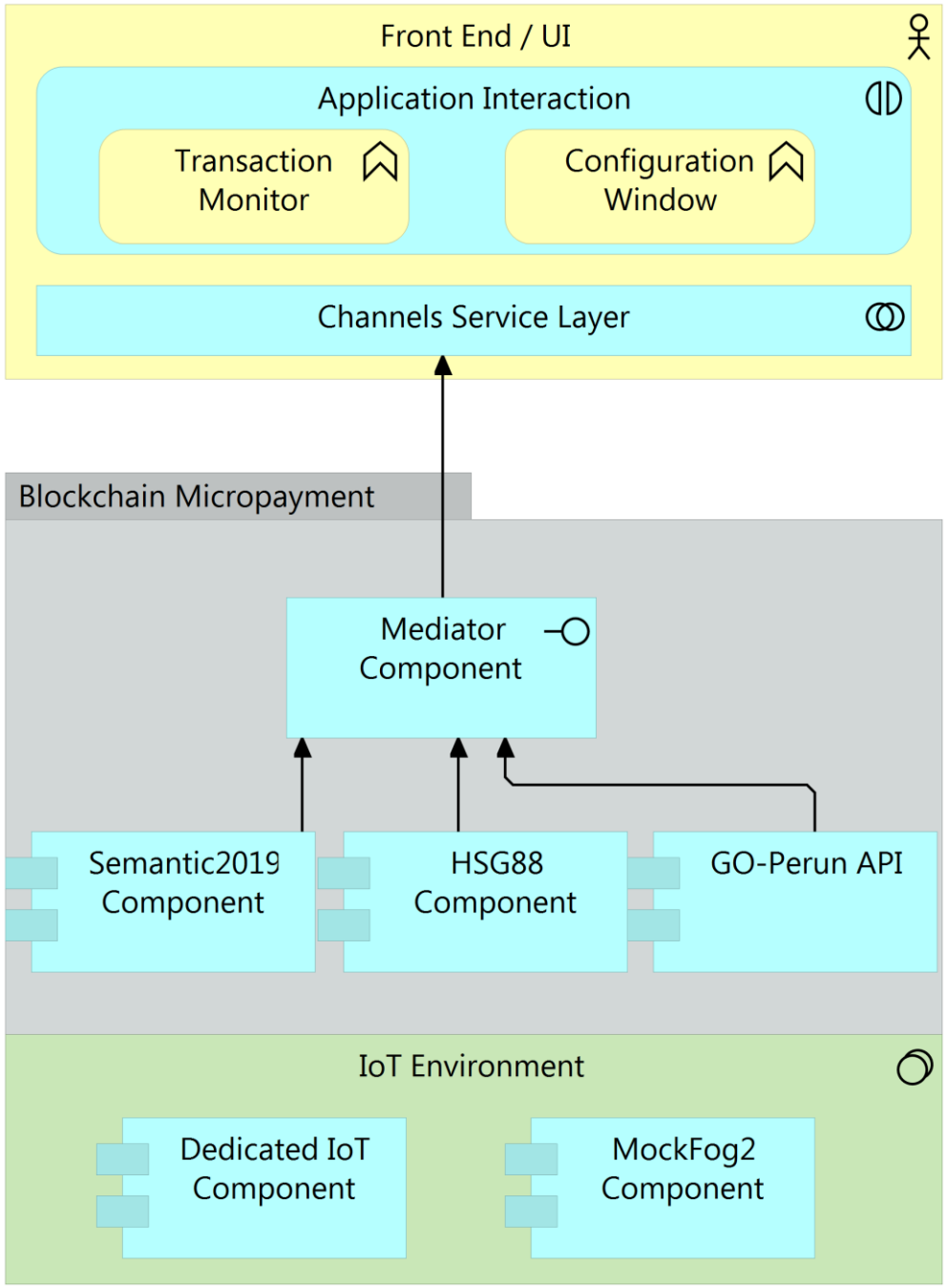

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