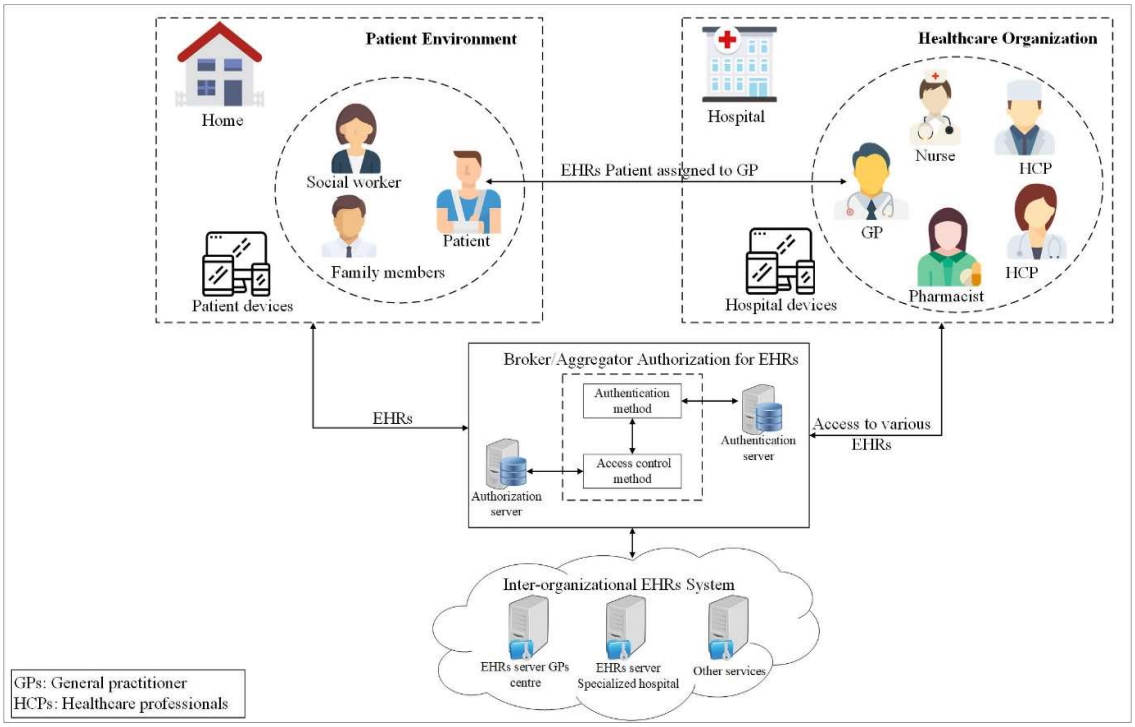
IMT3501 – Case Study Description and Task 1

I. Case Study (IMT3501): Out-patient Healthcare Monitoring System

Assume that you work for a public healthcare organization that has an in-house development team. The healthcare organization wants to develop a health care monitoring system for patients who are discharged and returned home in order to monitor and follow up with their health situation. As a part of the development team you are required to design a web- /mobile App-based healthcare system that allows remote consultation and communication between patients and medical professionals, general practitioners and specialists etc. as shown in the figure 1.



The system should allow the following:

1. **Enrolment and registration:** which refers to the process of end user (patient or caregiver(s), doctors and system admin) registering to your system. Patients need to enrol their information that includes national ID number, name, data-of-birth, contact details (e.g., phone number), basic health information etc. Upon the successful registration, a patient may start communication and consultation with a healthcare provider. **Note**: the registration of healthcare providers (medical professionals, general practitioners and specialists etc.) is done by the system admin. Assume that all healthcare providers are registered and have access to EHRs (Electronic Health Record) of the patients, which they are assigned to.
2. **Communication and consultation:** which refers to the process of the patients communicating with their healthcare provider to get an update about their current situation. The possible shared healthcare

information includes, but not limited to, heartbeat measure, blood pressure, sugar level measure etc. These measurements are assumed to be taken by medical devices at the patient's environment.

3. **System monitoring:** System administrators (trusted entities) will be assigned to manage the operation of your system. The administrators are responsible for the upkeep, configuration, and reliable operation of the system to ensure, but not limited to, performance, resources, and security of the system to meet the needs of the patients and healthcare providers.

The system' actors are:

1. Patient and assistants at home
2. Healthcare providers and all medical professionals
3. System admins

II. Task 1

This assignment is about the requirement specification step in the software development lifecycle.

1. Read and understand the case study

2. Identify the business goals of the system

3. Functional specification
   a. Identify the main assets that the system consists of
   b. Identify and specify the main actors, or roles, that the system deals with
   c. Develop high-level system architecture of the system
   d. Identify and specify the functional requirements of the system
   e. Identify and specify the main use cases of the system

4. Security requirements
   a. Identify the potential external and internal drivers for the security requirements
   b. Identify and specify high level security requirements for the whole system
   c. Identify and specify detailed (fine-granular) security requirement of the system
   d. Identify and specify the main potential attacker profiles who would attack the system
   e. Identify and specify the main abuse cases of the system