ICT:
Emerging Technological Trends
and
Society

TuK

Btech IT/CT/CCN Year IV term 3

LECTURE 1 part B INTERESTING COMPUTING APPLICATION AREAS

SUBJECT CODE: ECII/ECSI/ECCI 4204

INTERESTING COMPUTER APPLICATION AREAS

LECTURE OVERVIEW

1. Lecture Aims & Objectives
2. Lecture Outline
3. Recommended chapter from recommended reading list
4. Lecture Topic
5. Q&A

COMPUTER APPLICATION AREAS

- **The aims of this topic are to:**

1) Identify different areas where interesting computer h/w, s/w & network applications are used

2) Introduce students to differents/w, h/w & network emerging trends in traditional & non-traditional areas of computer application

3) Identify and explain the history, evolution, development, function, characteristics and strengths and of h/w, s/w & network computer applications aforementioned

4) Discuss the social and ethical implications on society related to use of the aforementioned applications

COMPUTER APPLICATION AREAS

- **The objectives of this topic are to:**

1)Study how traditional h/w, s/w & network computing applications in common areas of society evolved & developed over time leading to disruption and innovation in key areas

2)Learn the front end, middleware and backend architecture of the traditional Vs Emerging computing applications

3) Learn and re-design h/w, s/w & network models to predict future disruptions to current computer applications in society

LECTURE OUTLINE

PART B:- SMART CLOTHING TECHNOLOGY

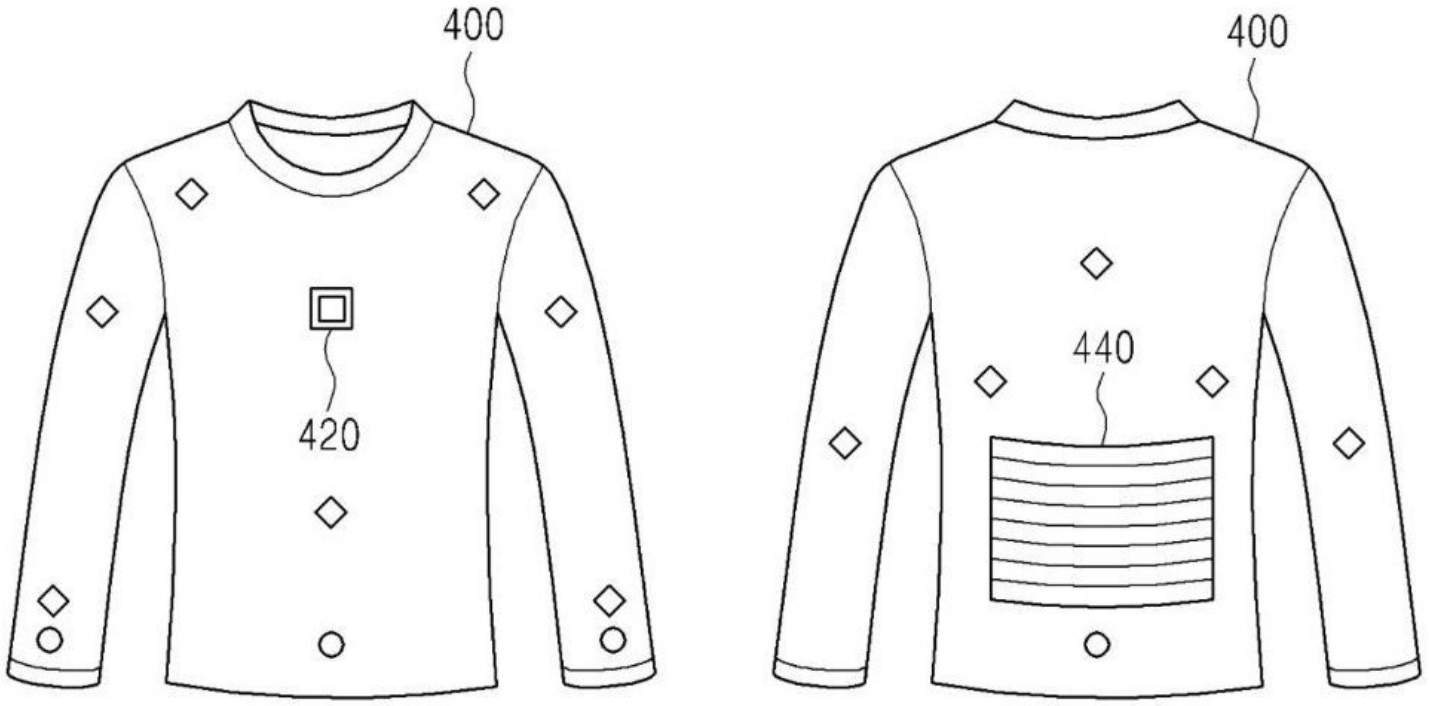
2 A) From shoes to computers on your feet-smart shoe technology-technologically advanced footwear (Feet of the human body and computer applications:-history, evolution and development)

2 B) From clothes to wearing computers on clothes -clothing technology-technologically advanced wear :- (the human body and computer applications:-history, evolution and development)-hats and socks and shoes

COMPUTER APPLICATION AREAS

SMART CLOTHING TECHNOLOGY

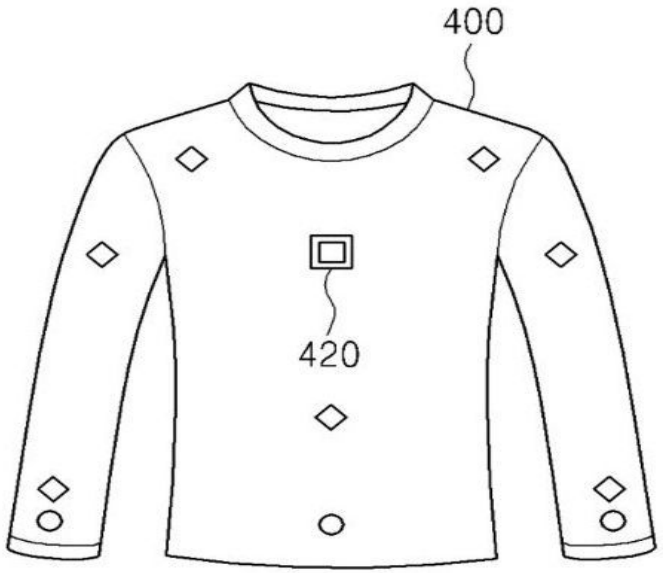
- **electronic textiles 1980s**
- **clothes integrating electronics**
- **used fabrics that enable digital components**
- **Later became smart textiles (S.T.)**

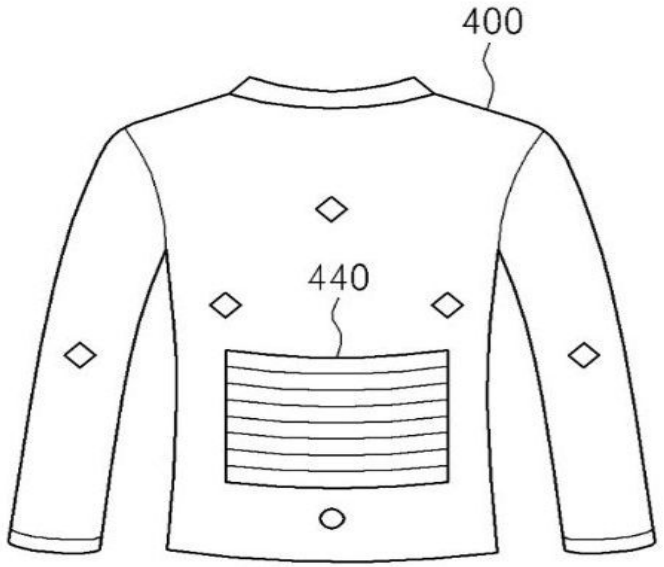


COMPUTER APPLICATION AREAS

SMART CLOTHING TECHNOLOGY

- **2 categories of S.T.-**
  - **Aesthetic (AST)**
- **Performance Enhancing (PEST)**





- **Aesthetic (AST)**

- embed electronics(how?)

- **Performance Enhancing (PEST)**

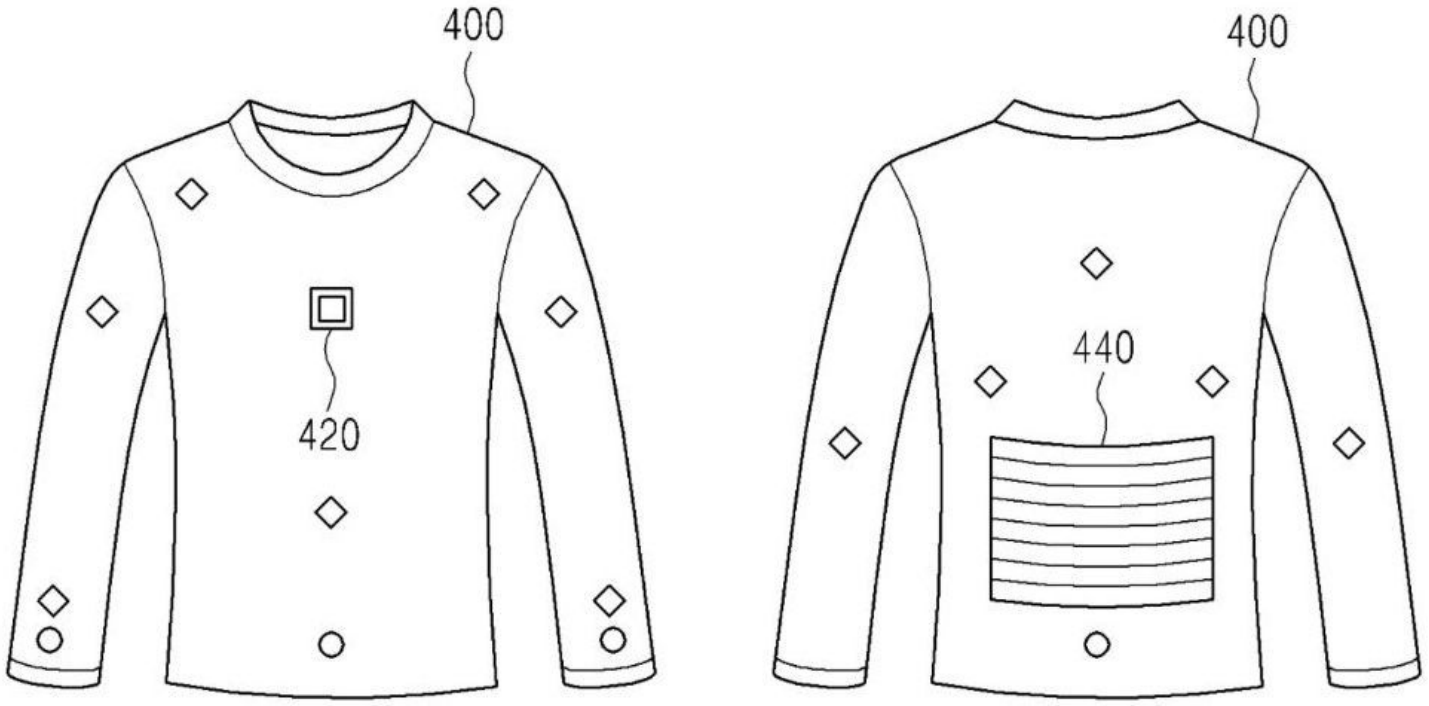
-Used in athletics....WHY?HOW?

COMPUTER APPLICATION AREAS

SMART CLOTHING TECHNOLOGY

- **Q-how can electronic and computational functionality be integrated into textile fabric to become SMART?**

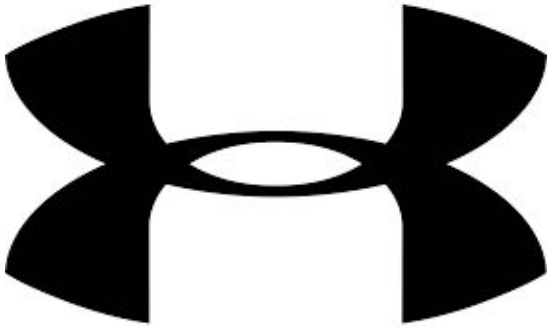
- **3 categories of F.T.**
  - **1st Generation Fibertronics**
  - **2nd Generation Fibertronics**
  - **3rd Fibertronics**



COMPUTER APPLICATION AREAS

SMART CLOTHING TECHNOLOGY

- **1st Generation Fibertronics**
  - **attach sensor**
- **2nd Generation Fibertronics**
  - **embed sensor**
- **3rd Generation Fibertronics**
  - **clothing= sensor e.g. (HOW?WHY?)**



COMPUTER APPLICATION AREAS

SMART CLOTHING TECHNOLOGY

- **Fibertronics (aka smart clothing technology) can be defined as:-**
  - **Clothing that monitors wearer's physical condition(HOW?WHY)**
  - **integrated electronic and computational functionality**
  - **WHAT IS THE PURPOSE?**
  - **Collect biometric data (e.g.?) AND transmit to an app in real time**

COMPUTER APPLICATION AREAS

SMART CLOTHING TECHNOLOGY

- **Use ECG (meaning??) sensor electrodes**
- **collect electrical body signals**
- **Capture biometric data**
- **Textile/fabric acts as motherboard (HOW?)**

HUMAN AND COMPUTER VISION

1) From human shoes to computers for your feet-technologically advanced footwear (the human body and computer applications:-history, evolution and development)

COMPUTER APPLICATION AREAS

COMPUTERS ON YOUR FEET

- **1) Definitions:**

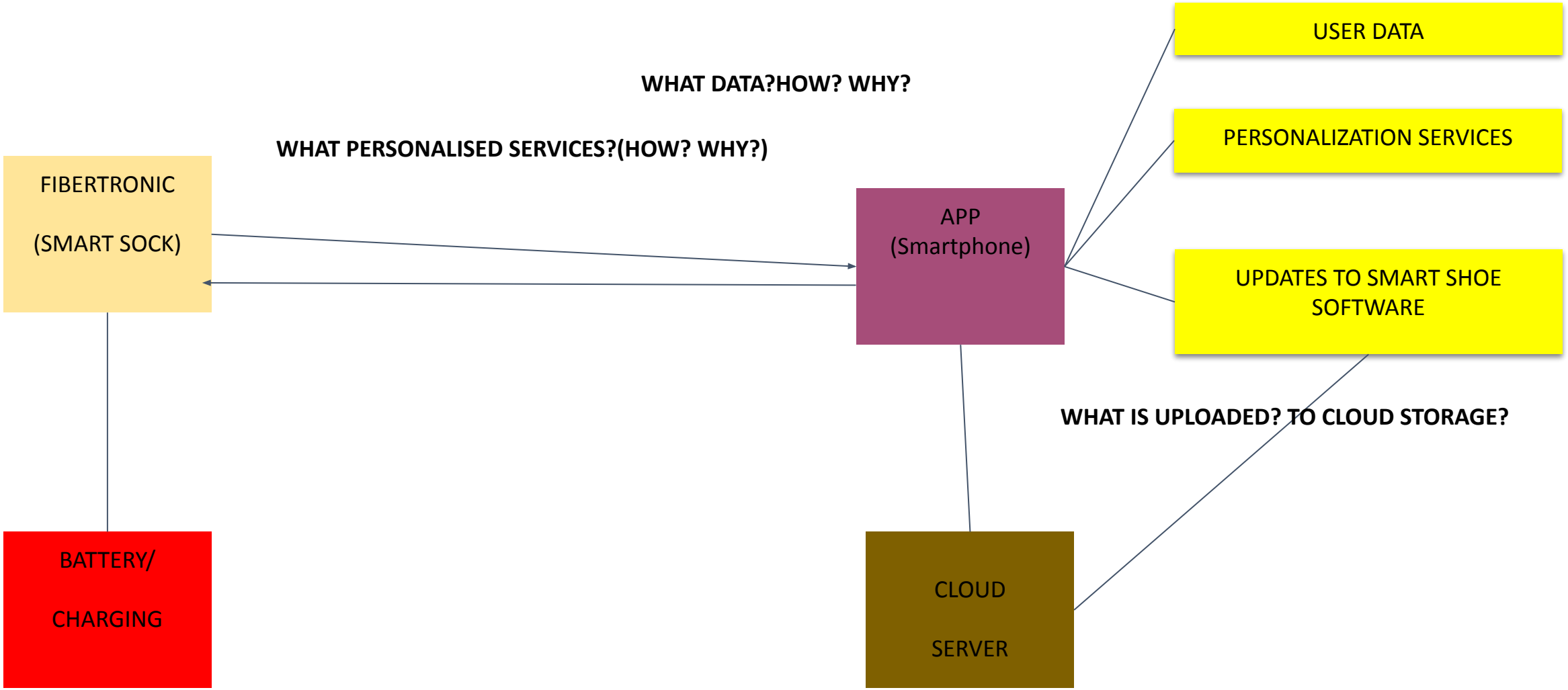
- **Smart shoes :- as traditional footwear combined with technology AND apps**

COMPUTER APPLICATION AREAS

COMPUTERS ON YOUR FEET

- **SMART SHOES TRENDS**
  - **Bluetooth**
  - **Ultra light (WHAT IS THIS? HOW? WHY?)**
  - **Accurate tracking**
  - **Auto-tightening**
  - **Coaching and monitoring (WHAT IS THIS? HOW? WHY?)**
  - **3D walk analyser (WHAT IS THIS? HOW? WHY?)**
  - **Smart heating (WHAT IS THIS? HOW? WHY?)**
  - **Display custom design on its surface**
  - **Can be 3D printed**

CLOTHING TECHNOLOGY -HOW DOES IT WORK?



HUMAN AND COMPUTER VISION

2) From clothes to wearing computers on clothes for your body-technologically advanced Clothing :- (the human body and computer applications:-history, evolution and development)

COMPUTER APPLICATION AREAS

FROM CLOTHES TO WEARING COMPUTERS ON CLOTHES FOR YOUR BODY

- **1) Definitions:**

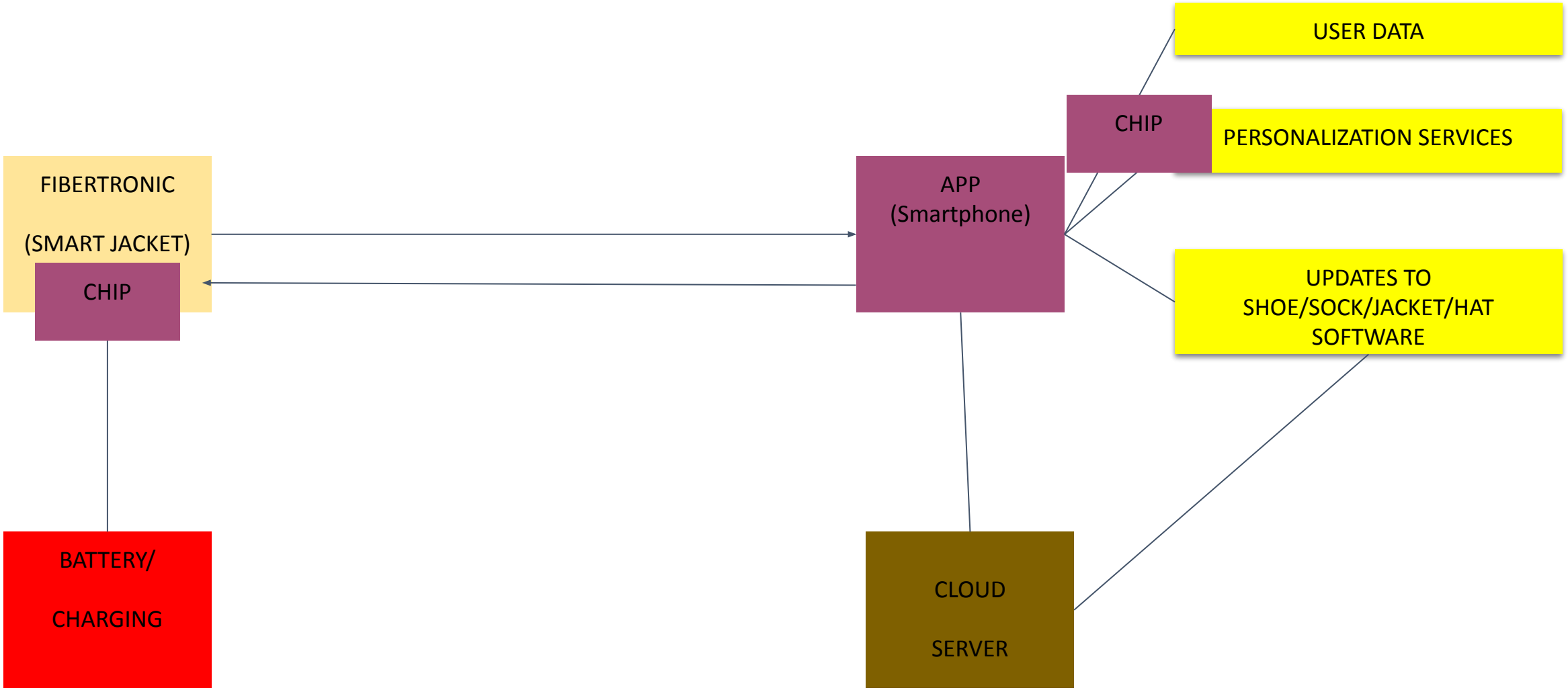
- **Smart Jacket:- textile enhanced functionalities (HOW?WHY?WHAT CAN IT DO?)**

COMPUTER APPLICATION AREAS

FROM CLOTHES TO WEARING COMPUTERS ON CLOTHES FOR YOUR BODY

- **SMART JACKET TRENDS**
  - **Bluetooth enhanced**
  - **Embedded chips(WHY? HOW?)**
  - **Use haptic feedback(HOW? WHY?)**
  - **Contain a battery**
  - **Collect data(WHAT TYPE? HOW? WHY?)**

CLOTHING TECHNOLOGY -HOW DOES IT WORK?



QUESTION AND ANSWER SESSION

ANY
QUESTIONS
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