



SNS COLLEGE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION)

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Department of Biomedical Engineering

Course Name: 19BM0302 & WEARABLE TECHNOLOGIES Unit 3

Topic :Technical Challenges

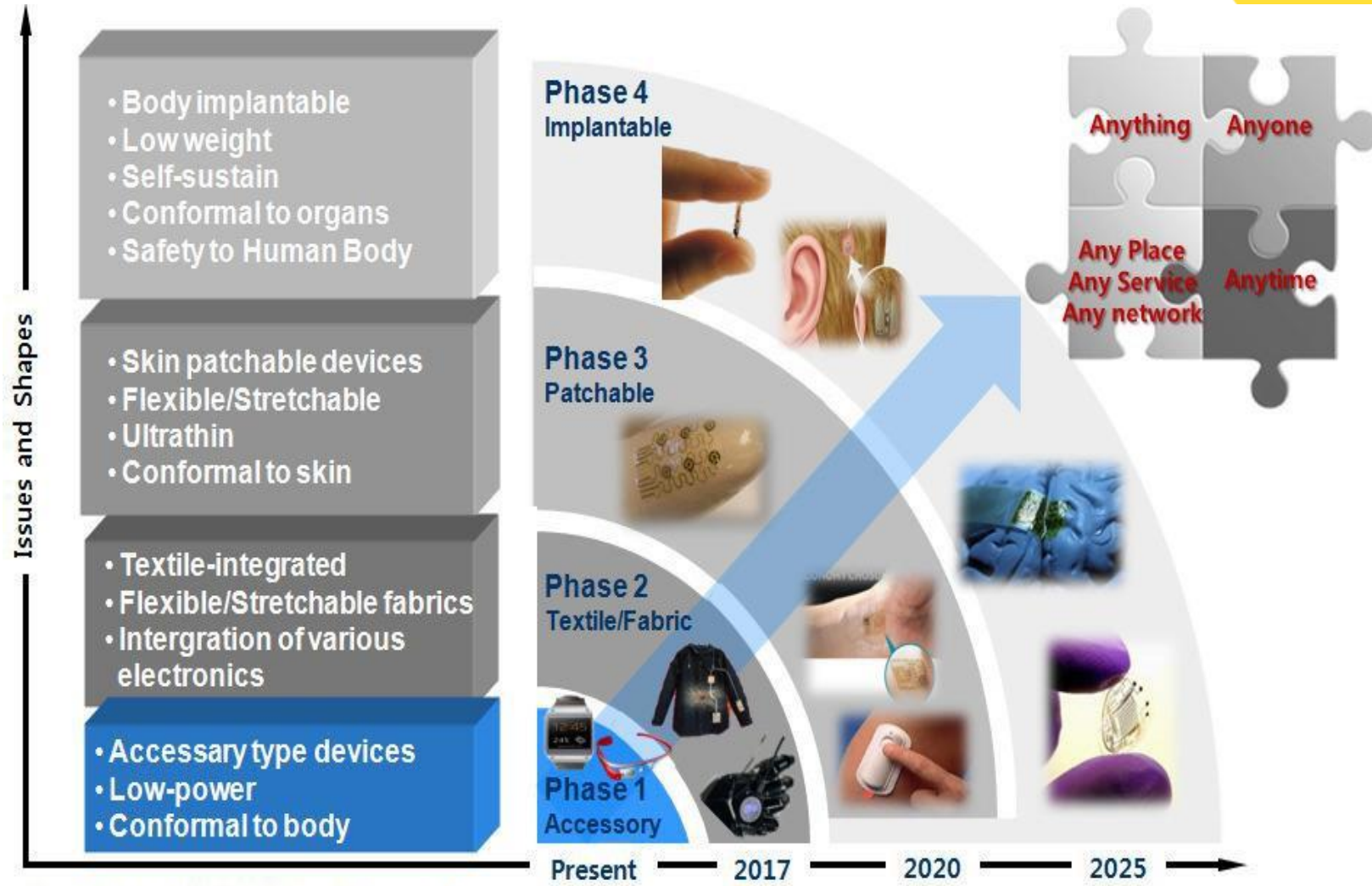
Semester :6

19BM0302/ **Technical Challenges**

Mr.S.Prince Samuel /AP/BME



INTRODUCTION



source : Ministry of Trade, Industry & Energy of Korea

19BM0302/ **Technical Challenges**

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MEDICAL ELECTRONICS



➤ **Wearable Smart Devices:**

- electronic devices and components intended to be located near, on or in an organism that have intelligent functionality and/or may be a part of an intelligent system via connectivity

➤ **Near-body electronics**

- electronic devices and components intended to be located near an organism where it does not contact the external surface of the organism directly

➤ **On-body electronics**

- electronic devices and components intended to be located on an organism where it contacts the external surface of the organism directly

➤ **In-body electronics**

- electronic devices and components intended to be located internal to an organism

➤ **Electronic Textiles**

- fabrics or textile-based electronic devices and components



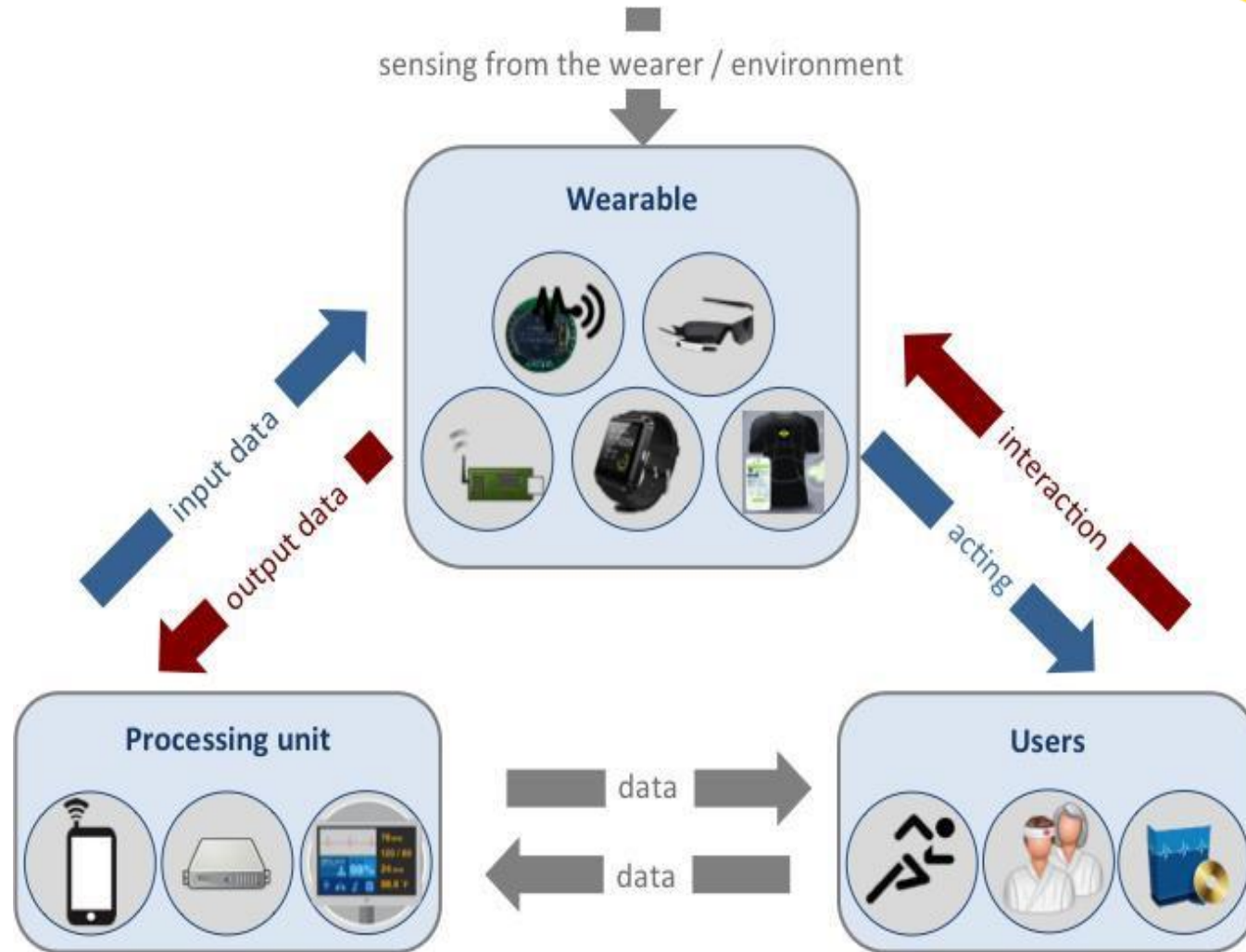
DIFFERENT KINDS OF WEARABLES



- **Wearer:** any living organism that is sensed by a Wearable.
- **Wearable:** any thing that senses the Wearer; it may have control, communication, storage and actuation capabilities, and sense the Wearer environment.
- **Mwearable:** a Wearable having at least one of media communication or storage capabilities.
- **User:** any living organism, physical object or software interacting with and / or acted by a Wearable; it may also interact with the Processing unit through devices and interfaces out of the scope of MPEG Wearable. In some applications, the Wearer is also the User.
- **Processing Unit:** a unit or a set of units, some of which can reside in a local client and/or in a remote server that intelligently processes the information received from and provides the results to the Wearable and/or the Wearer.



COMMUNICATION METHODS



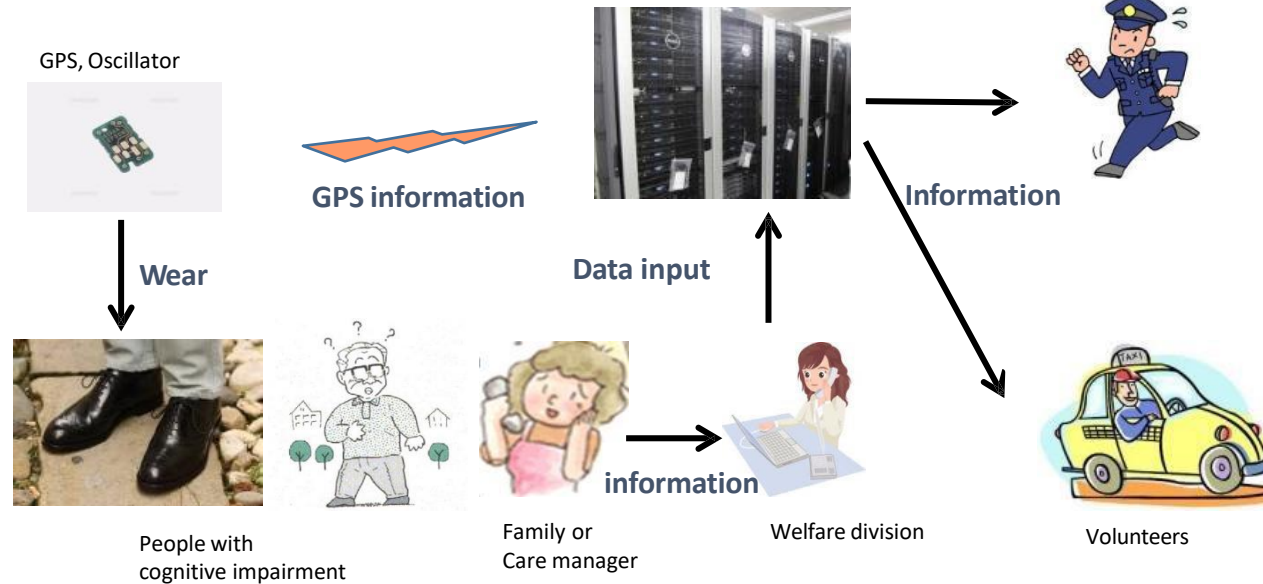
sion Title 3



On-body electronics: A searching system for people with cognitive impairment



- To find patients in early stage with secure data management system
- Secure personal information system
- Registration of patient and quick information delivery of lost patient
- GPS and oscillator worn by patient – GPS in shoes because lost patient at least wears shoes.



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ENABLING IOT TECHNOLOGIES



Vision Tit 2

Vision Title 3

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INNOVATION PRINCIPLE



Vision Tit 2

Vision Title 3

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COLLECTION OF WEARABLES



Retail

Typical Users

Sportsmen
Cyclists, Runners etc
Caregivers
First Responders
Military



Electronic ink

Electronic ink printer

Clothes will outsell phones

Smart Clothes can monitor body functions eg:

- Heart Rate
- Breathing Rate
- Muscle Fatigue
- Movement and Form
- Sweat

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A top-down photograph of a white card with the words "Thank you" written in purple cursive. The card is placed on a light-colored marble surface. To the left of the card is a bouquet of small purple flowers with green leaves. To the right of the card is a black pen with a white polka-dot grip. Further to the right is a small gift wrapped in white paper with a grey polka-dot pattern, tied with a red and white striped string. A spool of this same string is visible in the top right corner.

Thank
you