

ITU Young ICT Leaders Forum 2015

# IoT-based Healthcare Services and Incubation Project

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DAEGU  medivalley

# I. Project Scope

The objective of project is to improve quality of life of people through IoT-based Healthcare services and to support business incubation scheme with better regulatory support

IoT-based  
Healthcare  
Services

Services  
Incubation  
Scheme  
for SME

Int'l  
Healthcare  
Services  
Incubation  
Center

Regulatory  
Support

## Healthcare services

- 2 public services
- 3 commercial services
- 1 service for overseas

## Open platform for Healthcare services

- An open platform with internationally recognized standards
- Interoperability with exiting platforms
- Collaboration with Healthcare institutions

## Int'l Healthcare SVC incubation center

- Initiating Int'l Healthcare incubation center
- Supporting SMEs, inc. startups and ventures in business development
- Devising an int'l collaborations scheme

## Improving Regulatory Restrictions

- Study of regulatory nuisances in promoting IoT-based Healthcare services
- Introducing minimized regulatory restrictions within the project

**Daegu Metro. City's  
Healthcare Resources**

Advanced Medical  
Industry Cluster

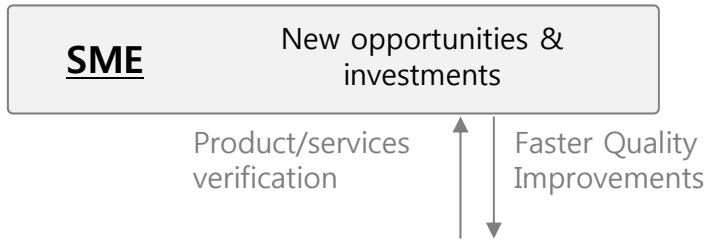
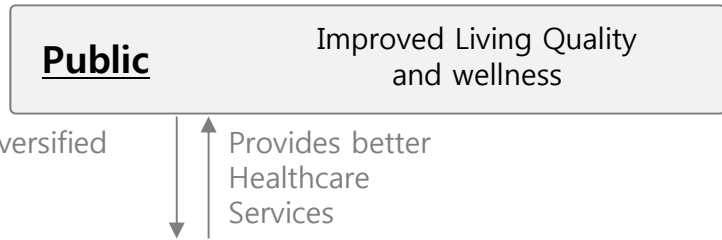
Medical Institutions  
(e.g. Hospitals)

Healthcare Services  
Vendors

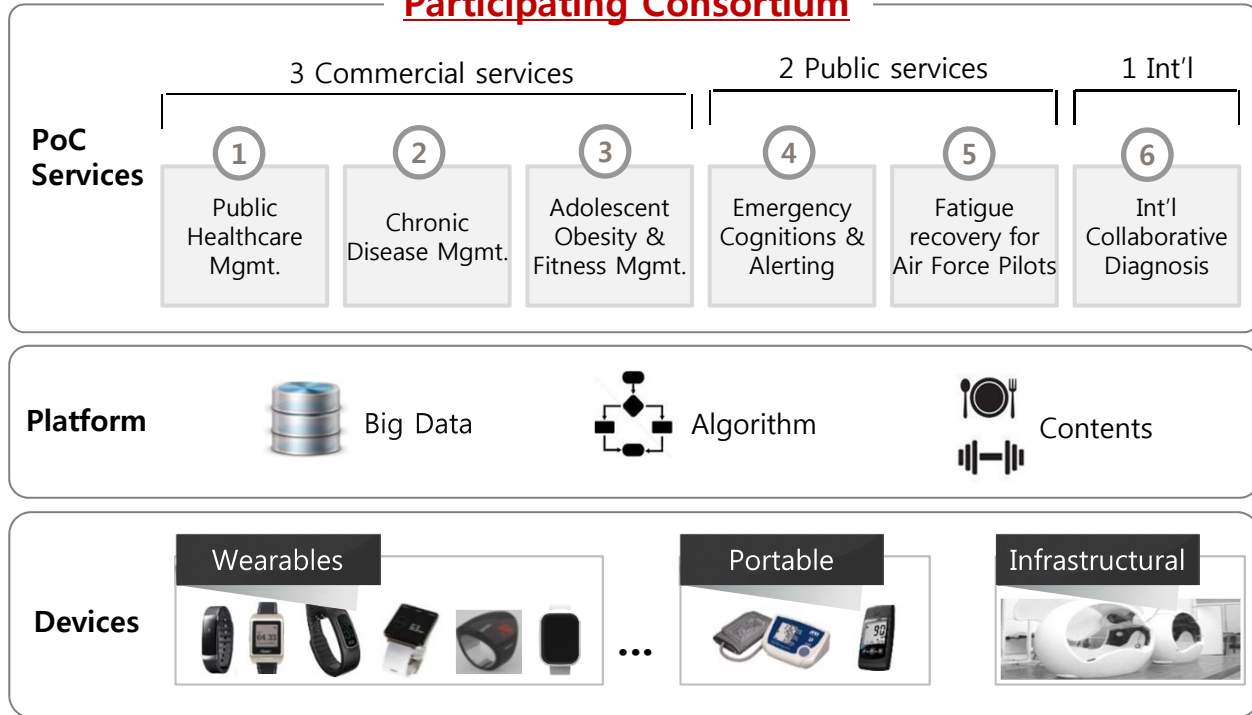
# II. Project Focus

Developing 6 services in accordance with demands identified from various primary users and trial will be given until the end of year

*Ecosystem of mutual benefits*



**Participating Consortium**

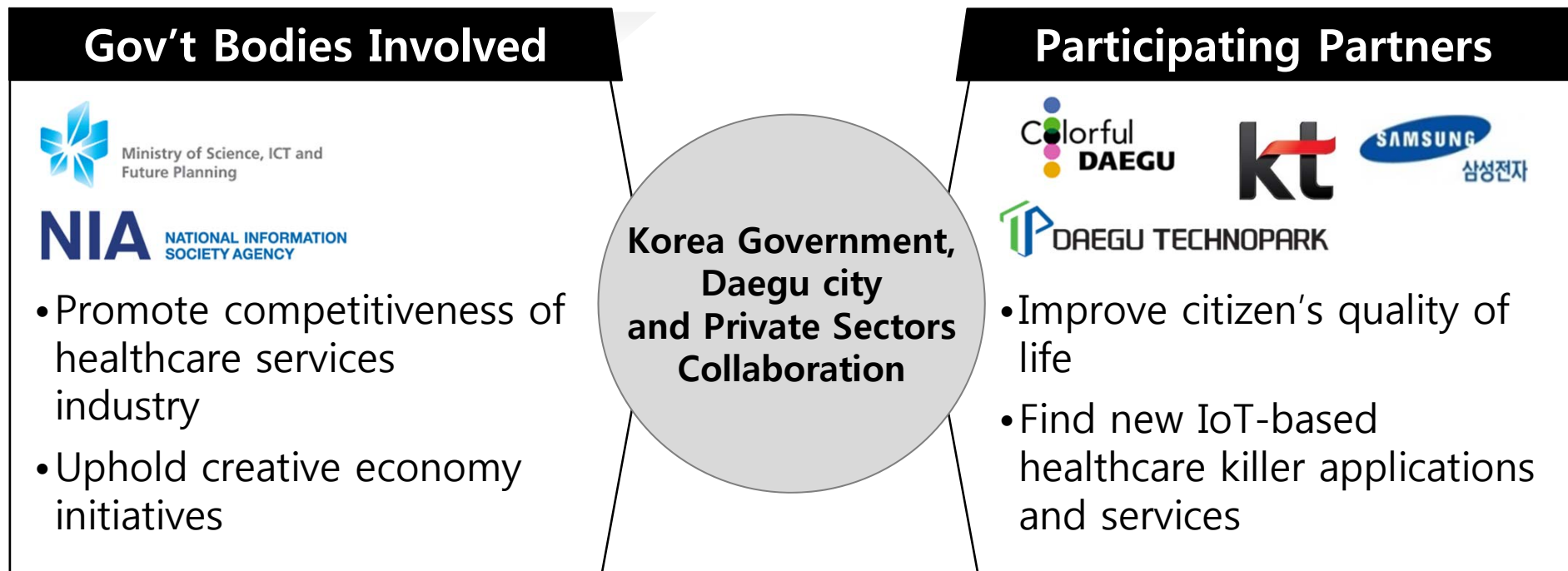


**Primary Users**



### III. Project Approach

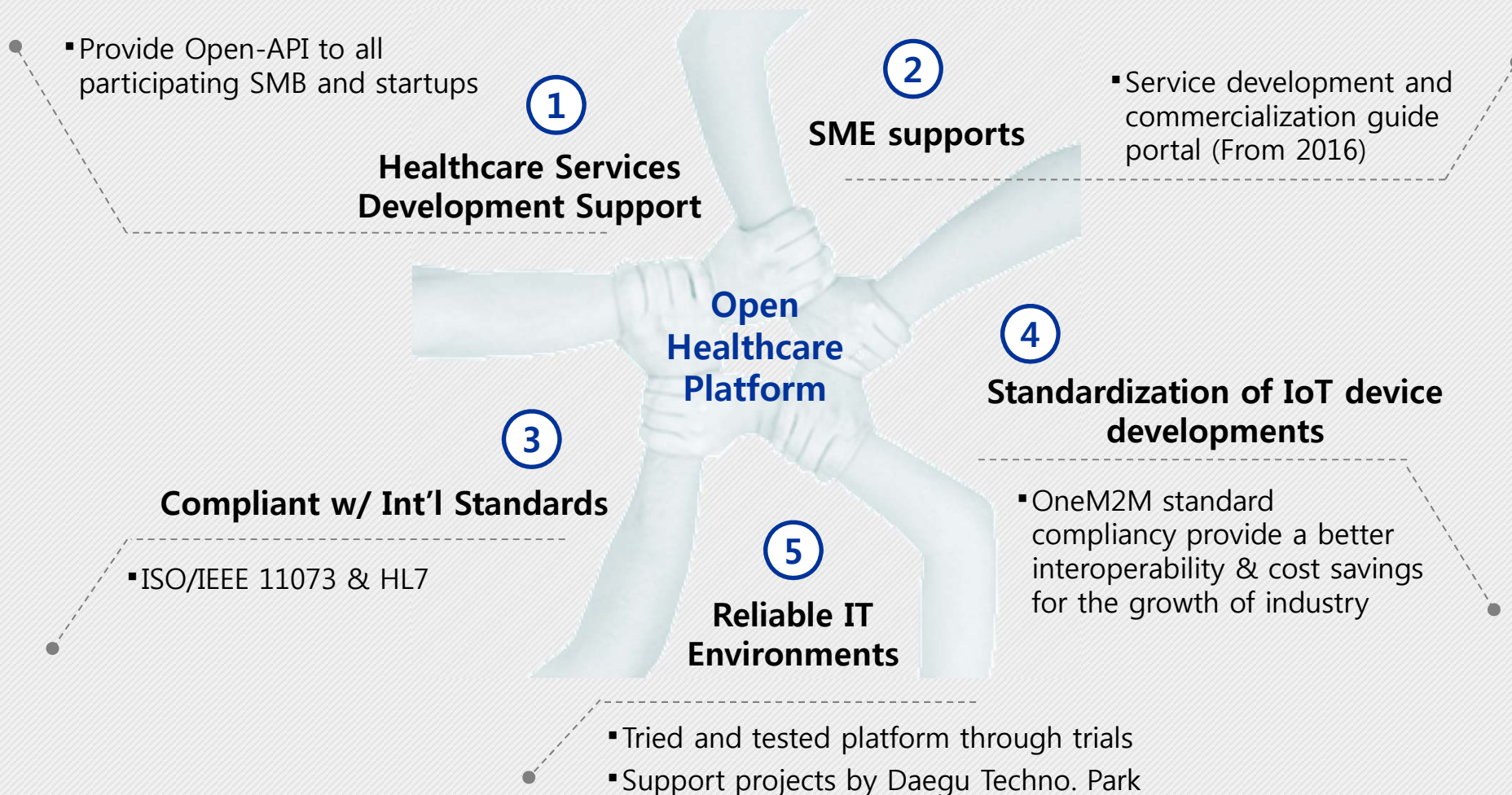
**Korea Gov't has initiated this project to promote IoT-based healthcare services industry that has strong growth rate in terms of volume of revenue and future job creation**



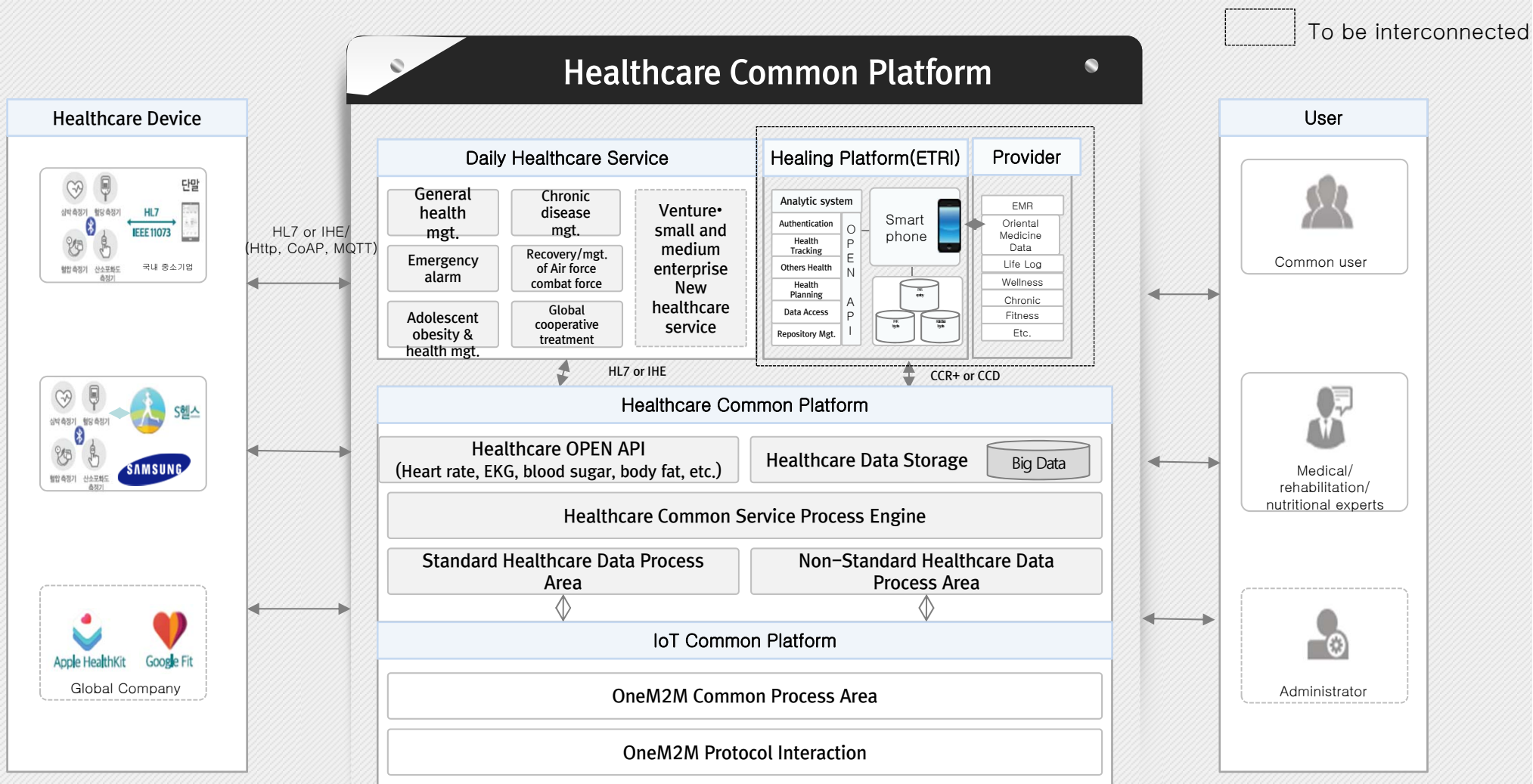
# IV. Standards and Interoperability

## 1. Role and Benefits of Platform

The Healthcare platform will be based on Common-IoT-Platform that uses OneM2M standard, with commercial features developed from KT's own IoT Services Platform.



# IV. Standards and Interoperability: Open Platform Architecture



# IV. Standards and Interoperability

The Healthcare platform is complying not only with OneM2M but also, compliant with Healthcare related standards, such as ISO/IEEE 11073 and HL7.

## Healthcare Platform Standards



Open API



|                          |                                        |                                        |                    |                    |                    |
|--------------------------|----------------------------------------|----------------------------------------|--------------------|--------------------|--------------------|
| Application Layer        | IEEE 11073 DIM                         | IEEE 11073 DIM                         | HL7 CDA            | HL7 CDA            | HL7 CDA/CCD        |
|                          | HTTP/SOAP/CoAP                         | HTTP/SOAP/CoAP                         | HTTP/SOAP/CoAP     | SOAP/HTTP          | SOAP/HTTP          |
| Transport Layer          | DTLS/TLS                               | DTLS/TLS                               | TLS                | TLS                | TLS                |
|                          | TCP/UDP                                | TCP/UDP                                | TCP                | TCP                | TCP                |
| Network Layer            | 6LoWPAN/ZigbeeIP                       | 6LoWPAN/ZigbeeIP                       | IP/IPsec           | IP/IPsec           | IP/IPsec           |
| Data-Link/Physical Layer | WiFi, 3G/4G, Small Cell, IEEE 802.15.4 | WiFi, 3G/4G, Small Cell, IEEE 802.15.4 | Wired Area Network | Wired Area Network | Wired Area Network |



### 1 Compliancy with Int'l Standards

- oneM2M
- ISO/IEEE 11073 DIM and etc.

### 2 Interoperability with Legacy System

- Ensuring interoperability with other Healthcare platforms

### 3 Adaptation of proven IT mgmt.

- TR-069
- DMTF-CIM (Common Information Model)

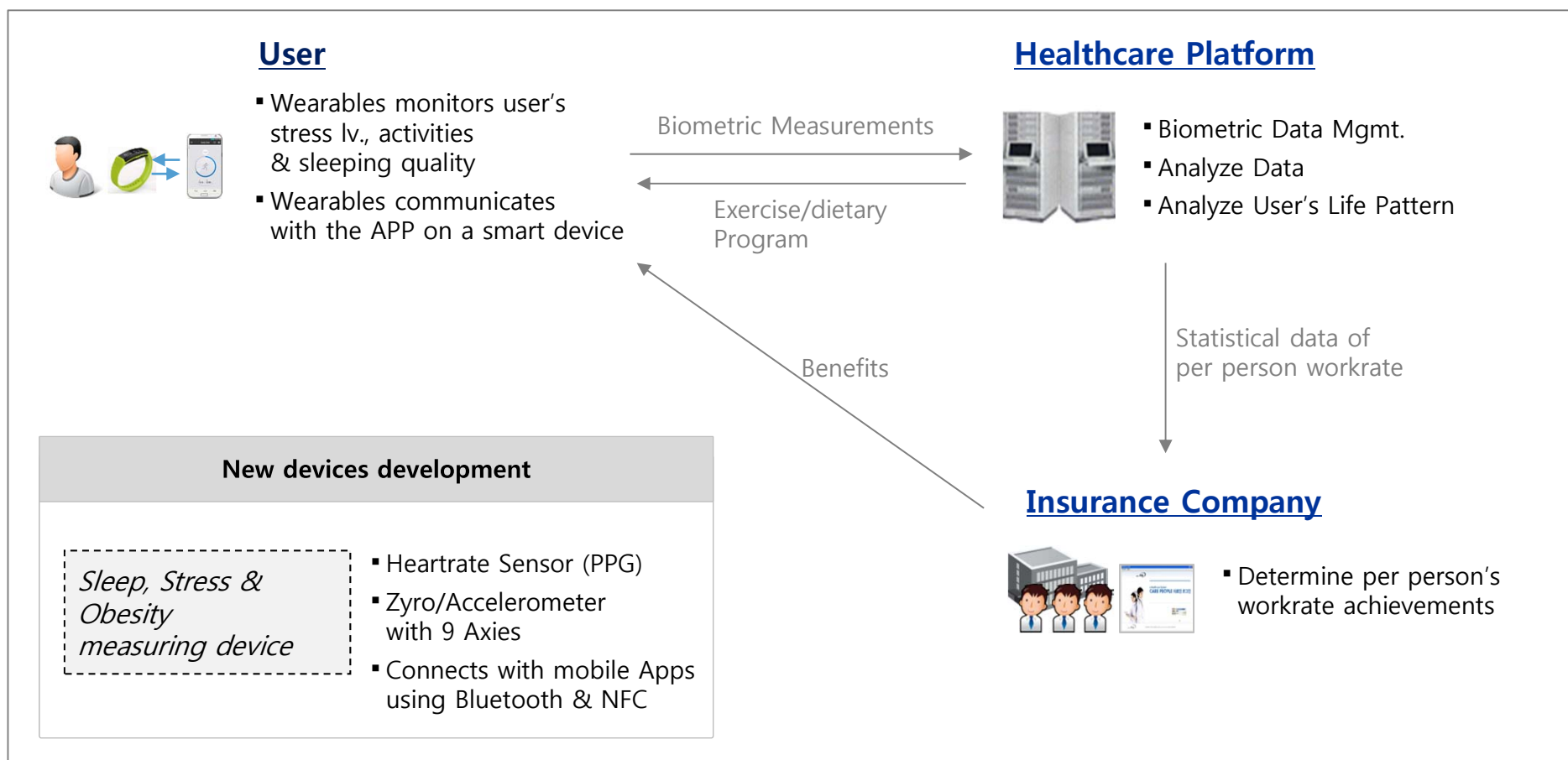
### 4 Healthcare Services Development Support for SMB

- Platform's open-API will be provided to all participating 3<sup>rd</sup> parties

# V. Demonstration: Public Healthcare Management Service

This service provides personalized exercise/dietary plan to users, monitors/measures how they follow such program and rewards users for their accomplishment.

## Public Healthcare Management Service

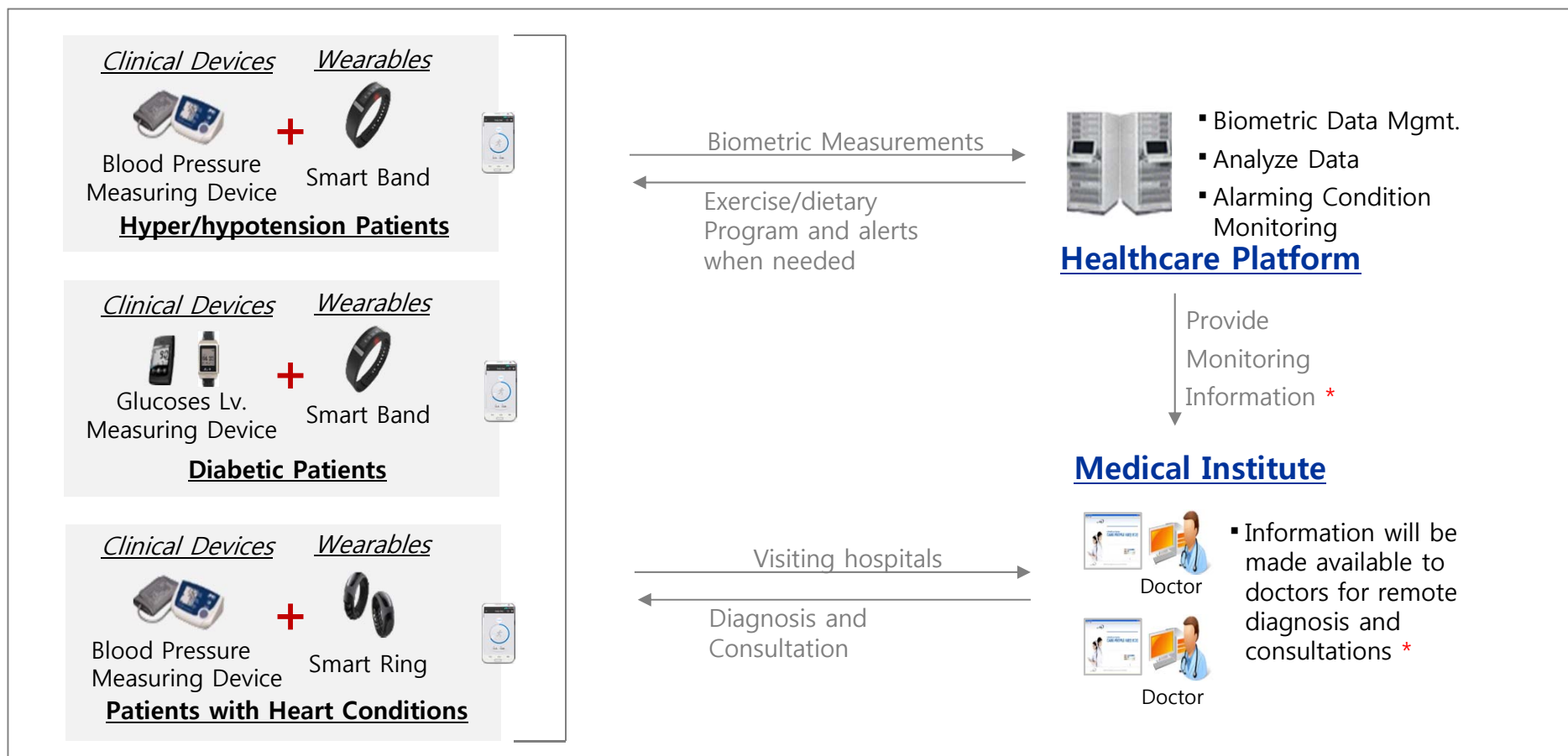




# V. Demonstration: Chronic Disease Management Service

This service provides simpler means to measure user's biometric condition as well as suggesting personalized exercise/dietary plan based on measurements taken.

## Chronic Disease Management Service

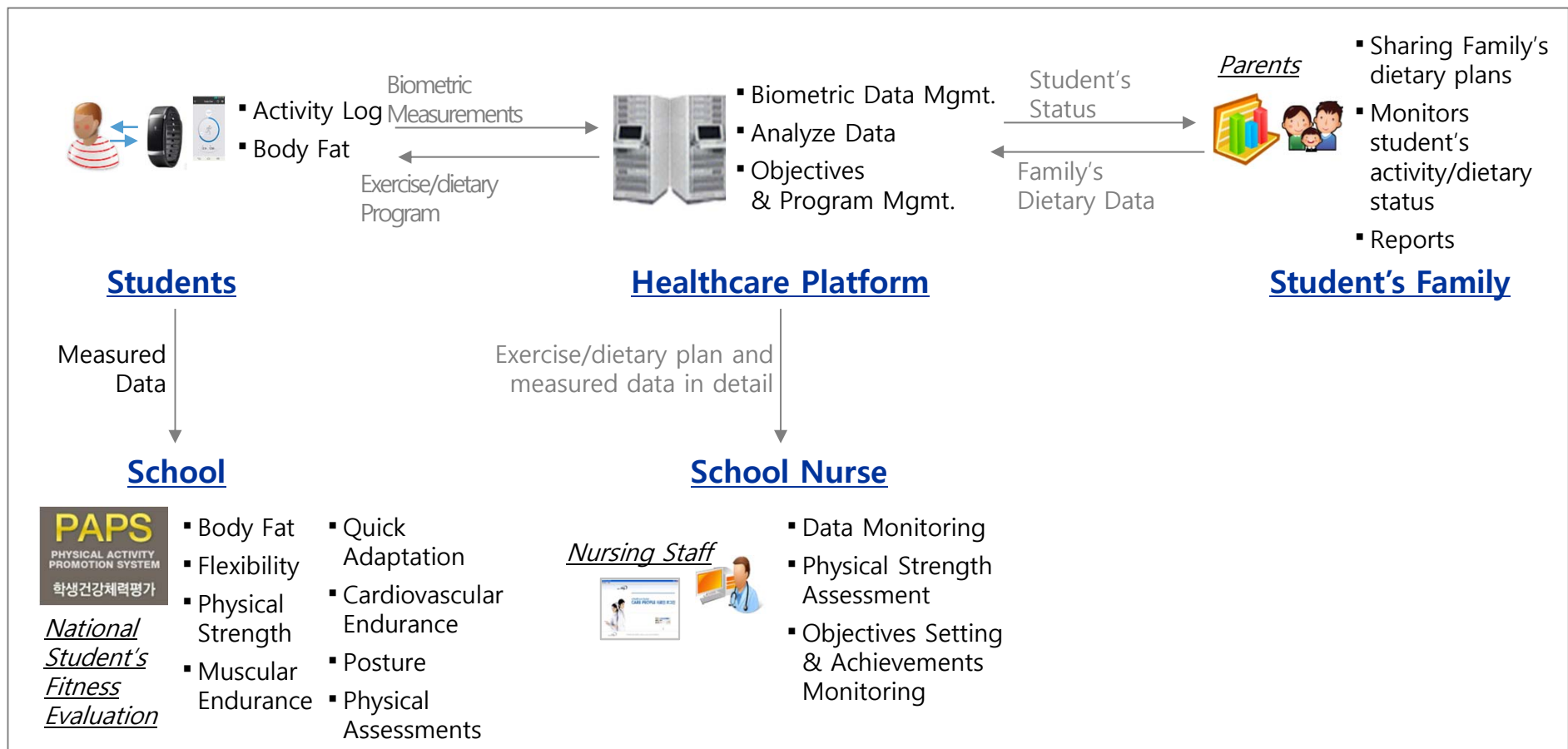


\* Due to KFDA approval process, services will be available during year 2016

# V. Demonstration: Adolescent Obesity and Fitness Management Service

This service provides exercise/dietary plan based on student's national fitness evaluation result and using a wearable device, it monitors how one carry out the program.

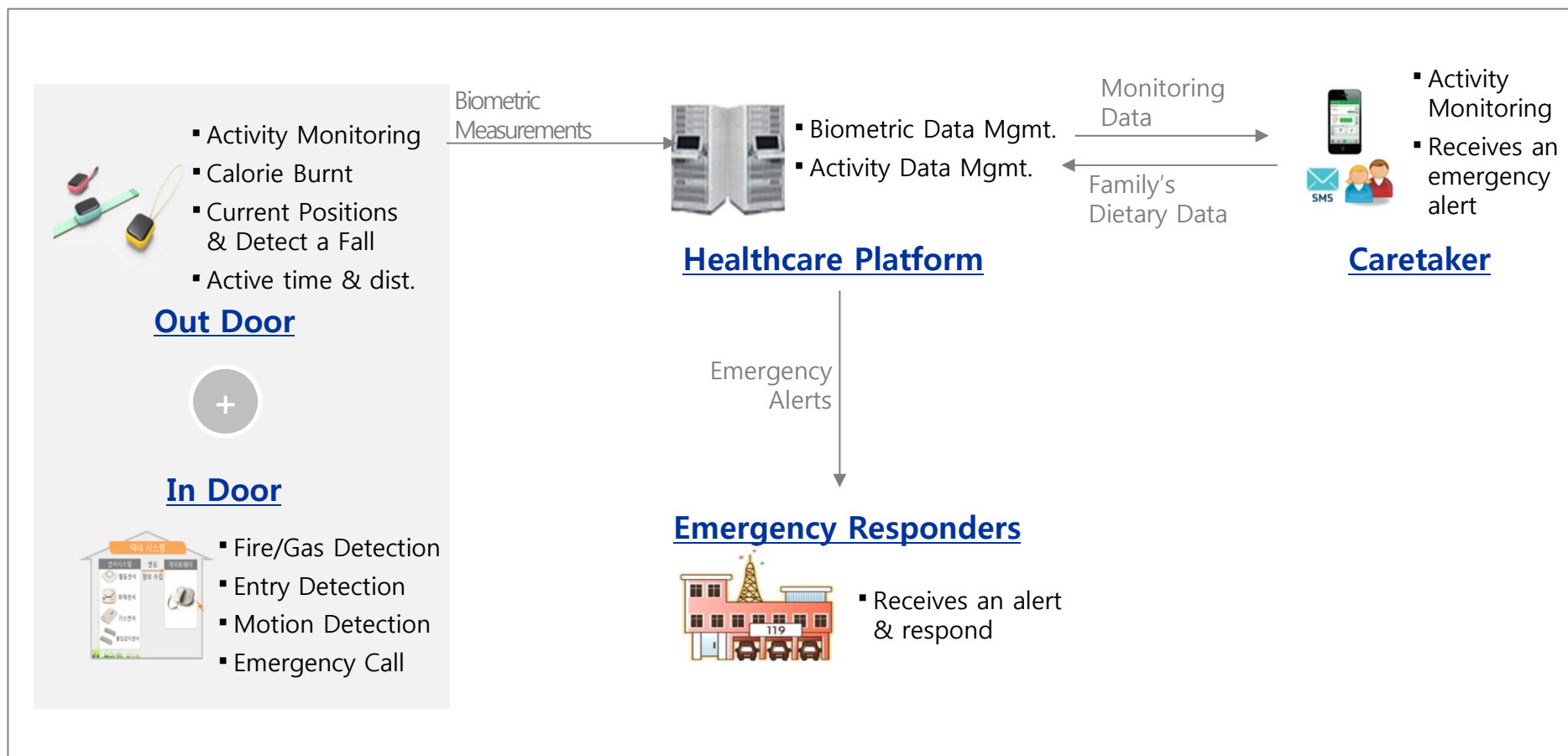
## Adolescent Obesity and Fitness Management Service



# V. Demonstration: Emergency Cognition and Alerting Service

This service monitors for emergency situation of elderly person and alerts relatives and/or emergency services, if doubtful situation occurs.

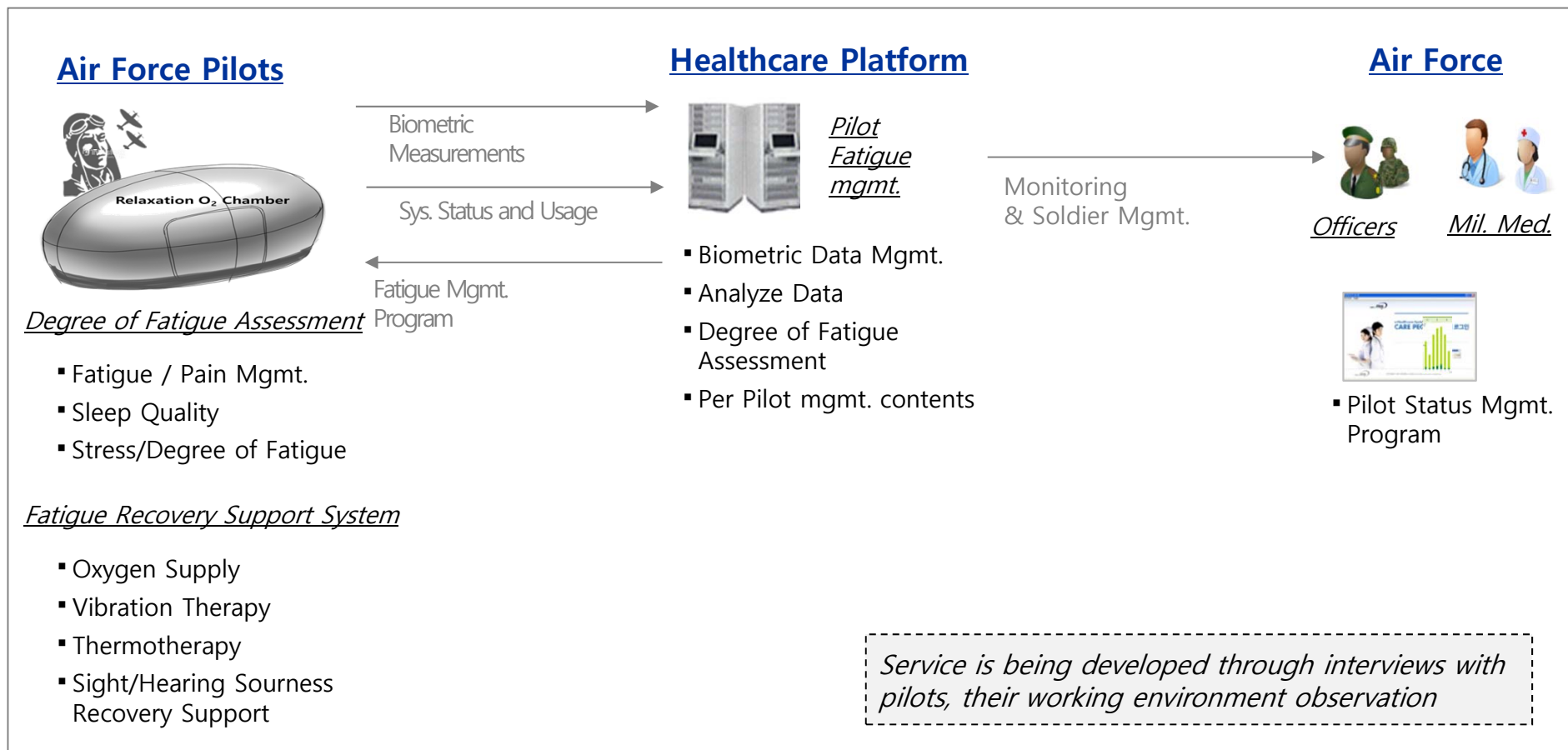
## Emergency Cognition and Alerting Service



# V. Demonstration: Fatigue Recovery Support Services for Air Force Pilots

This is a specialized services for Air Force pilots by developing a CHAMBER, to evaluate fatigue level of a pilot as well as to provide soothing environment while in a CHAMBER.

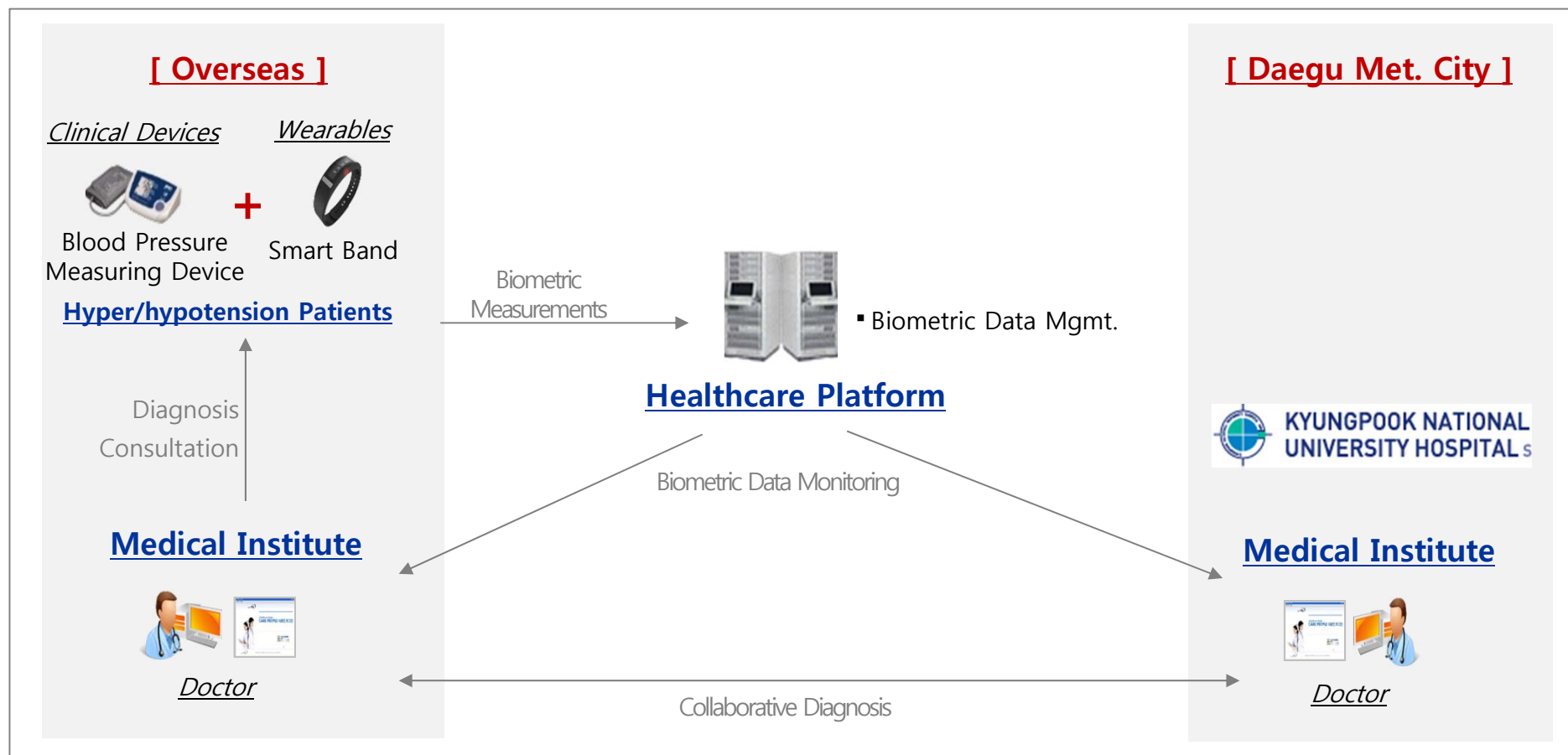
## Fatigue Recovery Support Services for Air Force Pilots



# V. Demonstration: International Collaborative Diagnosis Service

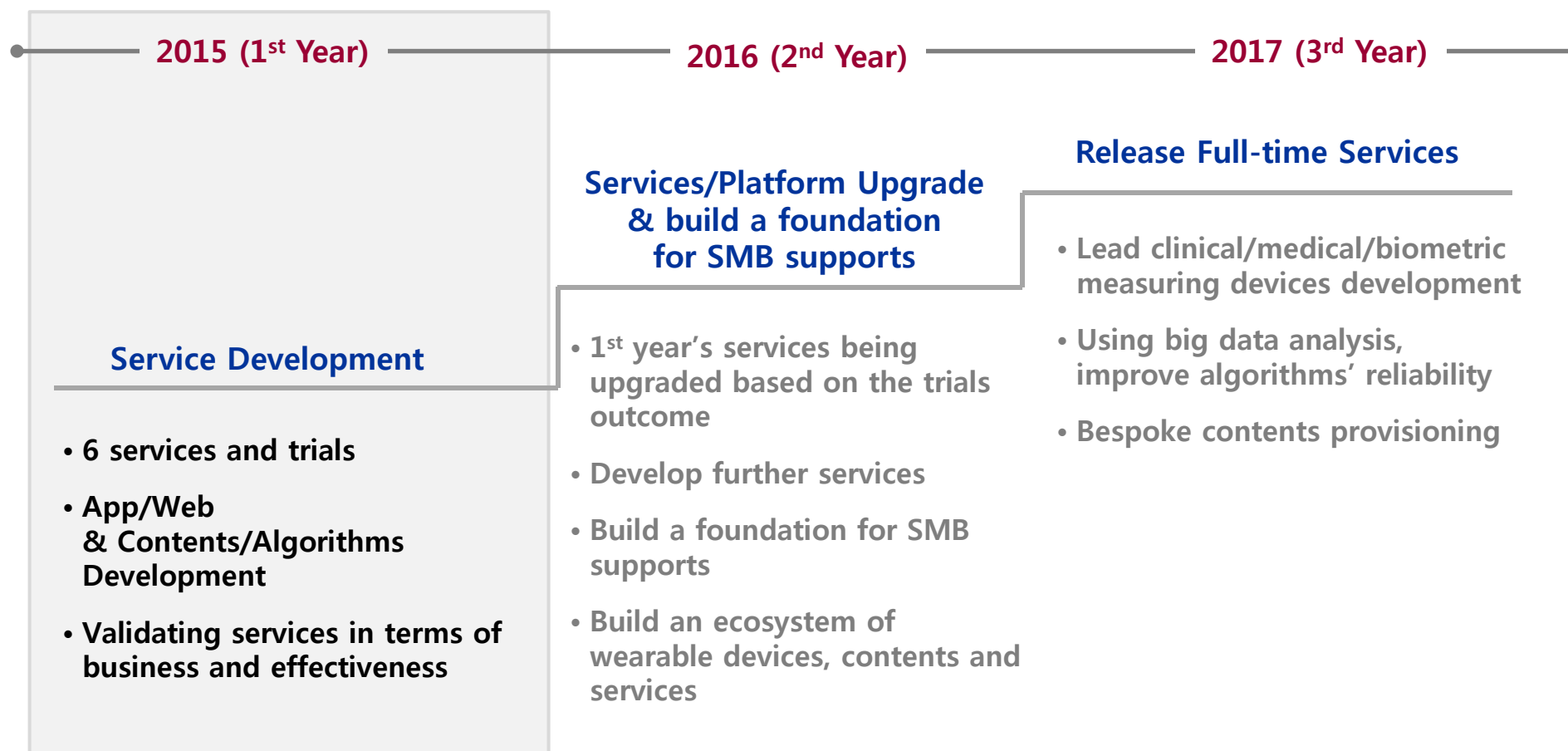
This services provides means to share blood pressure records and activity log of patients in Vietnam, between hospitals in Korean and Vietnam for collaborative diagnosis.

## International Collaborative Diagnosis Service



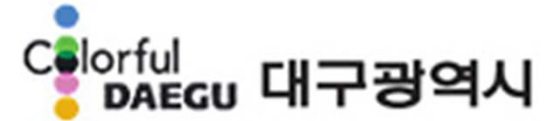
# VI. Deployment Plan

During the 1<sup>st</sup> year, focus is on service/platform development and during 2<sup>nd</sup> & 3<sup>rd</sup> year, focus is on incubation of SMB's services while service/platform upgrade continues.



## VII. Participants

Team Leader: Daegu Metropolitan City, South Korea



Partners: total 33 including SMEs



**Thank you !**