Independent Living Analytics Framework: An Assisted Living Solution for the Ageing Community in Malaysia

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Ageing

- The population of the elder aged 60 or over are growing at a faster rate than the total population in most countries
- Older people are often the victims of neglect, violence and abuse because of the increasing dependence.
- Hence, it is important to ensure an enabling and supportive ecosphere that would facilitate the ageing process to make the aged remain independent as long as possible
- These should include a comprehensive design of living arrangement such as housing and transportation for the aged so that they could age in a good health and participate in the political, social, economic and cultural life of society

Ageing in other countries

- Australia - public transportation system is designed to be geriatric-friendly
- European countries – Healthcare support system (intelligent dialogue-based mobile health monitoring system)
- Japan – 30% of its population is ageing society
  - Home electronics – the use of technologies in the home care such as smart homes
  - Healthcare - ICT implementation in the health care such as Telemedicine
  - Life innovation - incorporates effort such as customisation of electronic banking or online shopping for the aged
- Globally, researches concerning Ageing and ICT will revolve around smartphones and smart homes
- How about Malaysia?

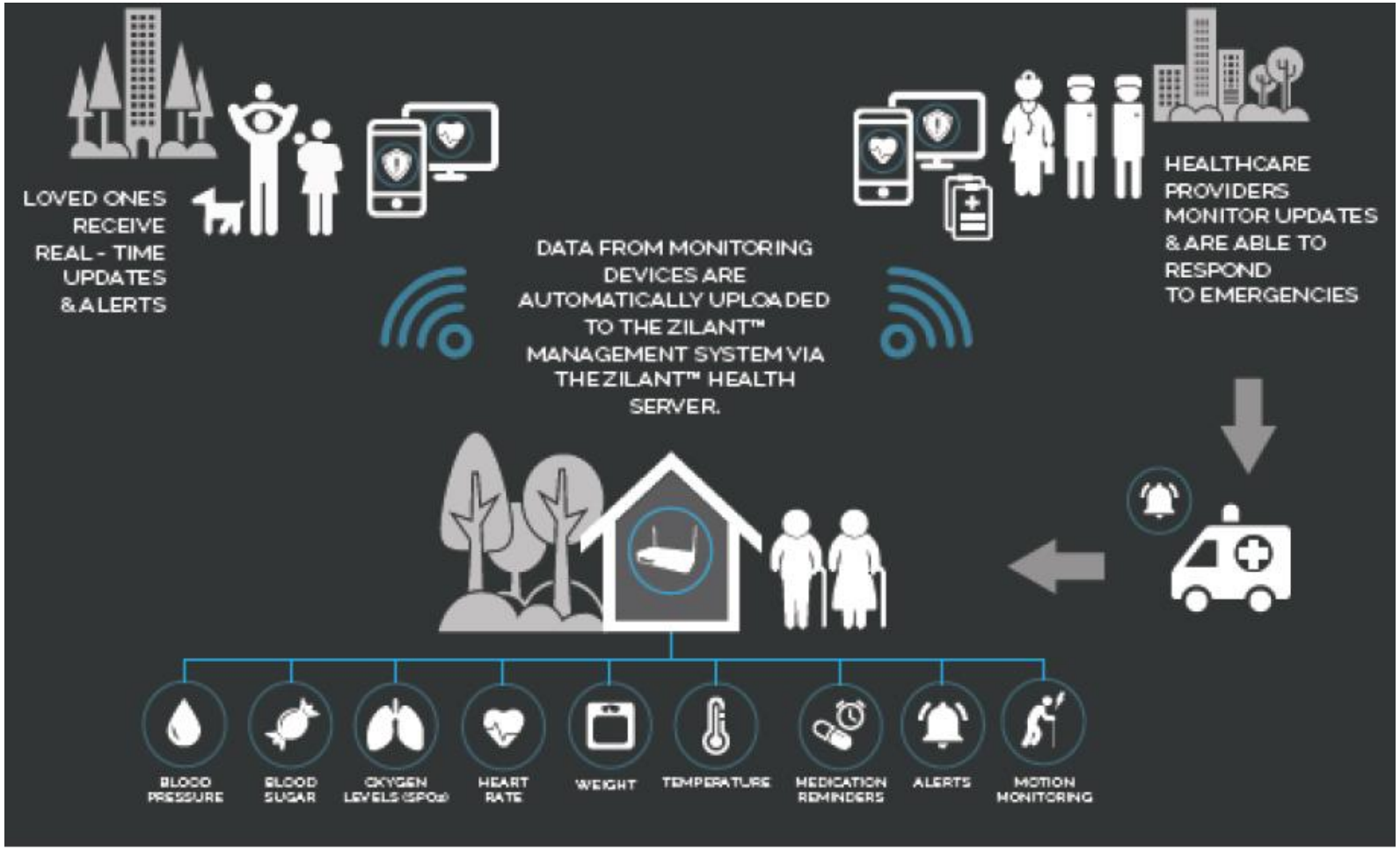
Ageing in Malaysia

- Malaysia is approaching ageing nation status in 2030 where 15% of population is ageing society
- Local's research works addressed challenges faced by Malaysia to manage its ageing society from the perspectives of social sciences
- Just a slight highlight on the importance of ICT in the healthcare sector
- No infrastructures been successfully identified ;)
- Malaysia is currently left far behind in providing a supportive and enabling environment for its current ageing society.

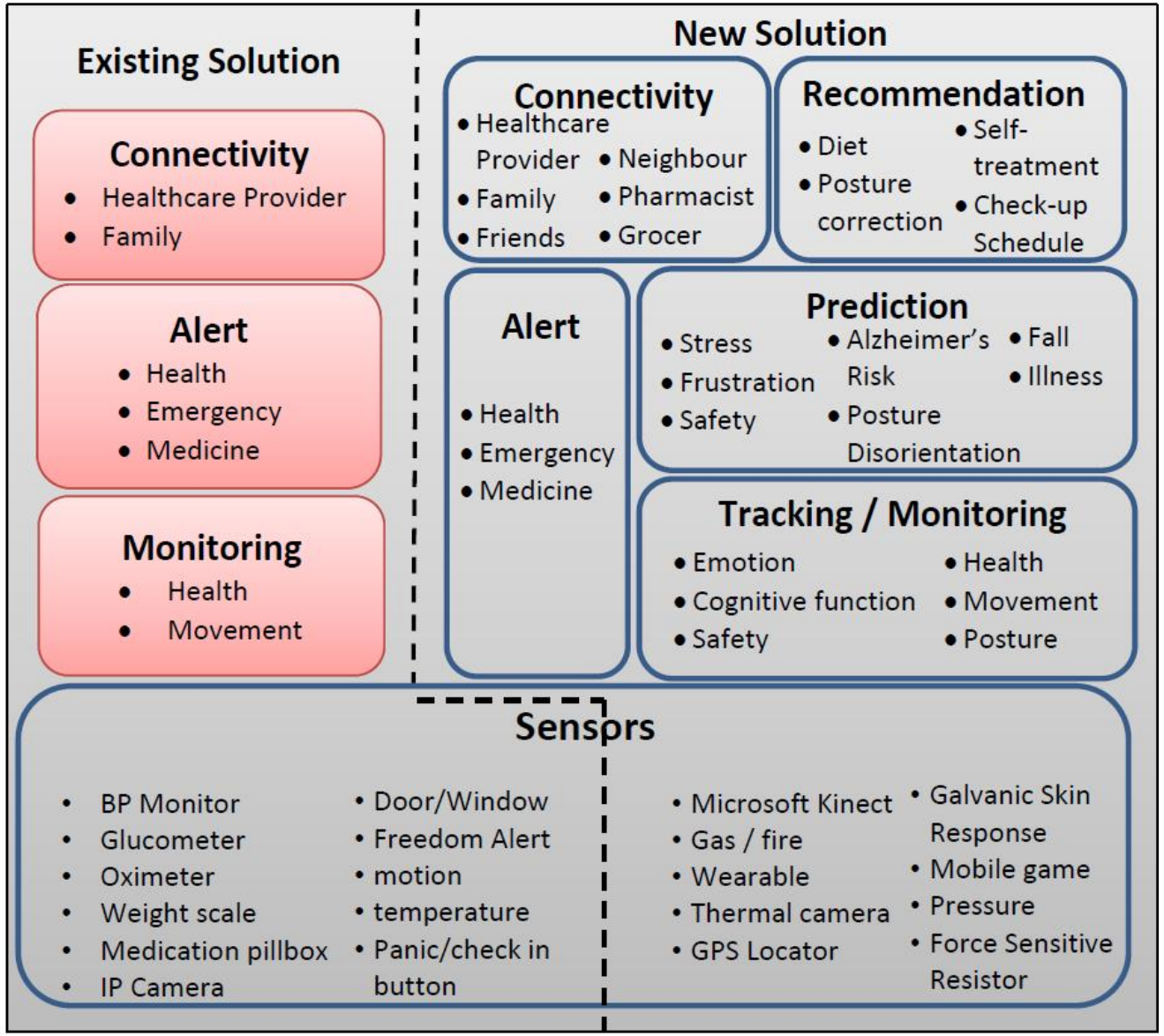
A breakthrough in Malaysia

- In 2014, Embedded Wireless has launched Zilant an assisted living solution that is also a cloud-based platform connected to sensors and smartphones.
- Zilant allows elderly to:
  - live independently and safely in their smart homes;
  - stay active in social life via connectivity to their loved one;
  - get best treatment via constant monitoring by health provider.
- But Zilant solution focus on the basic sensing, monitoring and connectivity with a little emphasize on self-management
- The facility is still lacking in terms of prediction and recommendation. Hence, we intend to empower the solution with prediction and recommendation engine that would take independent and assisted living to the next level. More sensors would be incorporate to detect movements, posture and emotion.

Zilant – as it is now



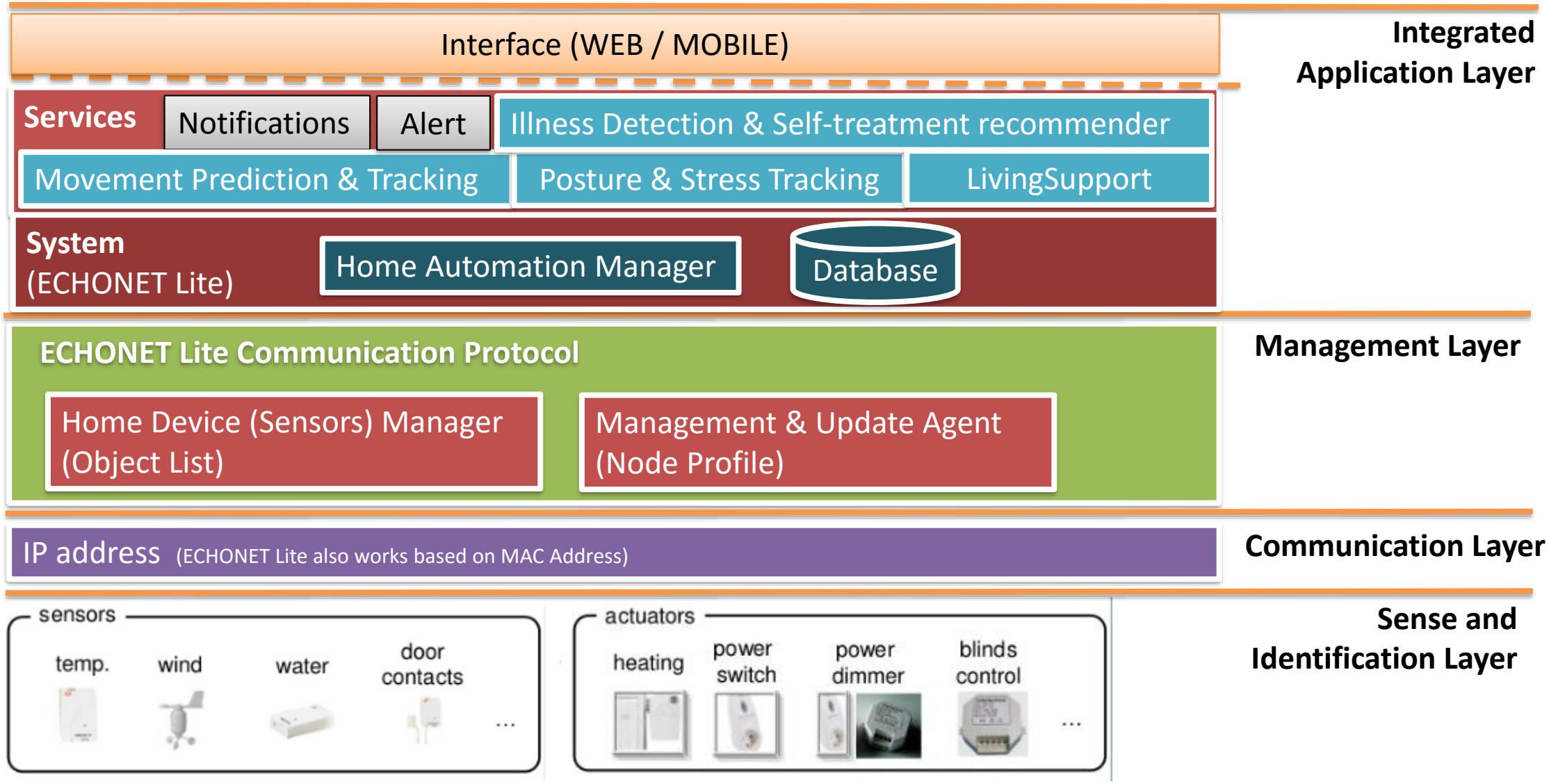
Our solution – enriched Zilant



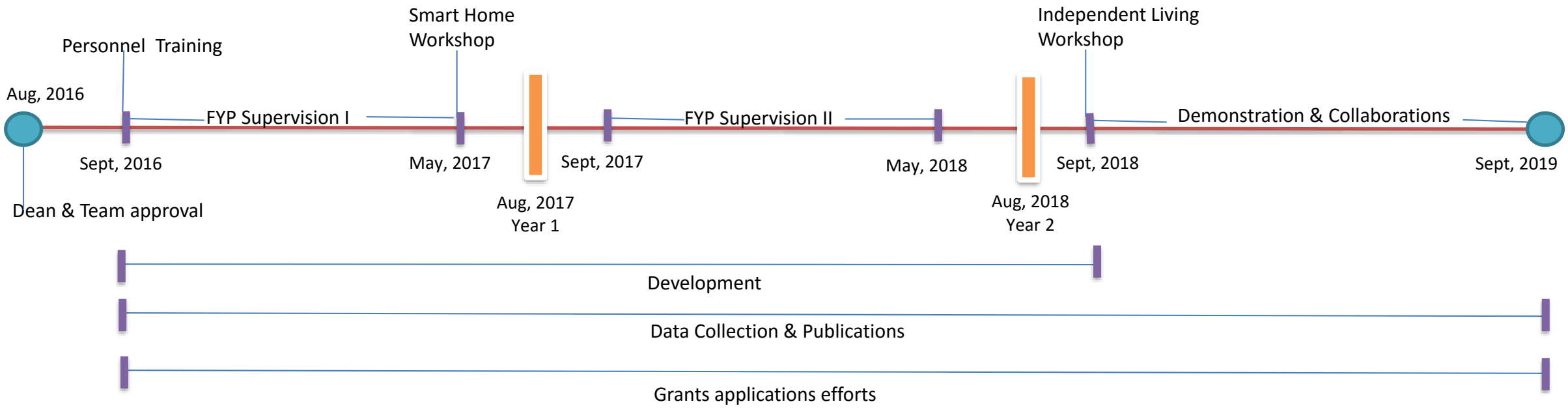
INDEPENDENT LIVING USING SMART HOME TECHNOLOGY

- Hybriding Static (Smart Home) and Dynamic (Wearable) Location Sensing for Assisted (Independent) Living
- Smart Home use cases:
  - Home Automation – lighting etc (ambient intelligence)
  - Family Care – Elder monitoring, health data monitoring etc
  - Home Security – Intrusion alarm, fire alarm etc
  - Others – Local Shopping and deliveries
- Smart Home Technology:
  - uPnP/DLNA - Universal Plug and Play (UPnP) / Digital Living Network Alliance (DLNA)
  - OSGi - Open Services Gateway Initiative
  - ECHONET
  - Zigbee

Independent Living Framework using ECHONET Lite (IOT 4 layers)



Road Map for Independent Living Framework



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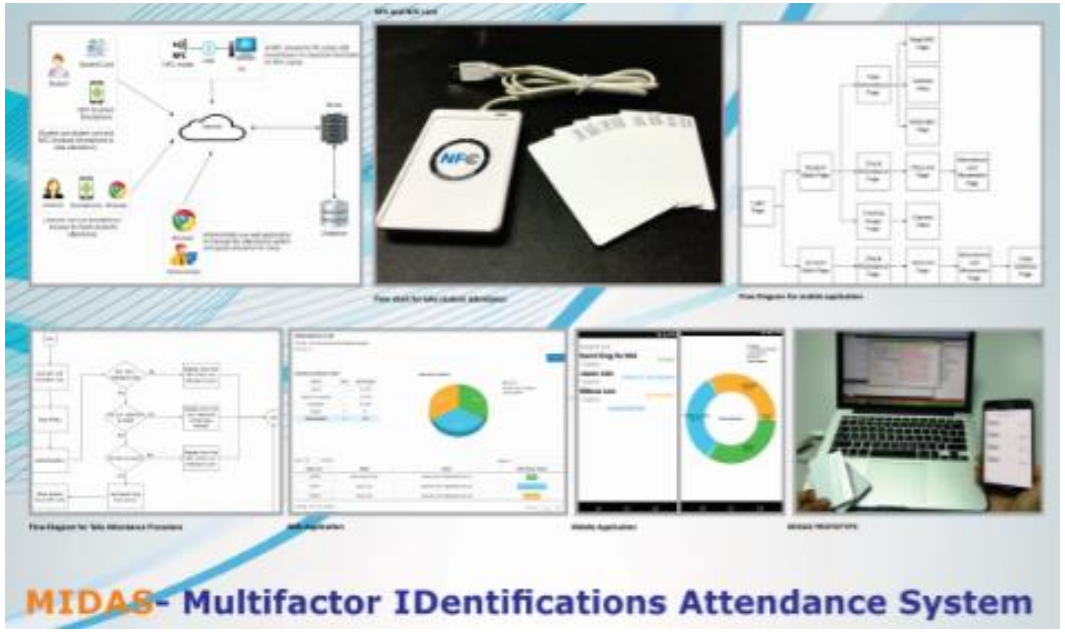
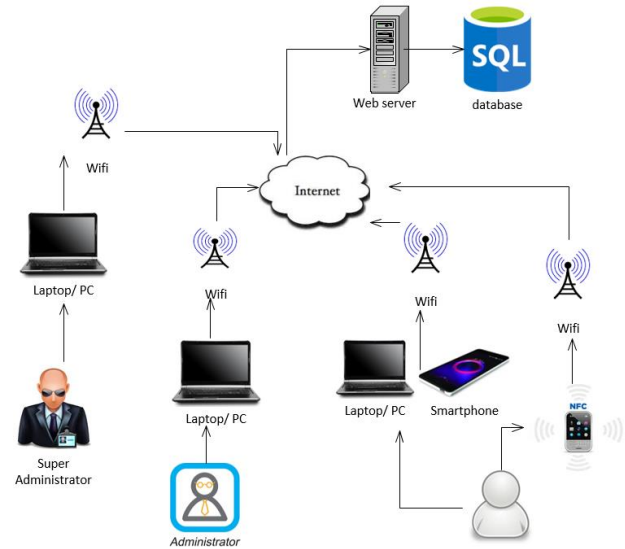
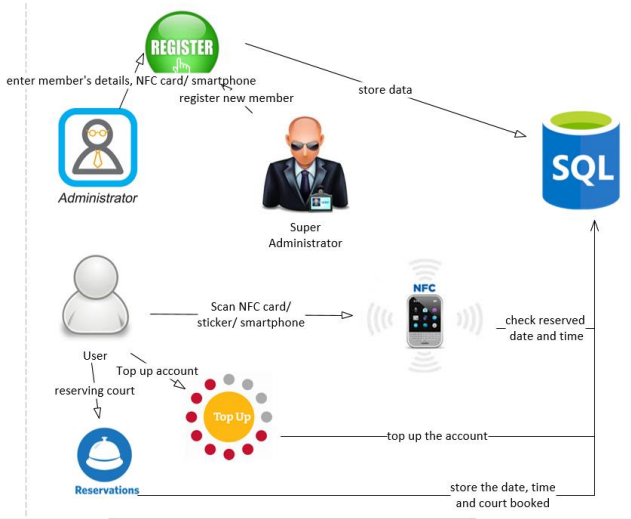


UNICBS: University Court Booking System





Further communications

We lead