



Understanding pedestrian behaviour for sustainable urban (re)development

Towards GDPR compliance in distributed, time synchronised IoT pedestrian monitoring system

Mayank Parmar
mayank.parmar@tudublin.ie

Paula Kelly
paula.kelly@tudublin.ie

Dr Damon Berry
damon.berry@tudublin.ie

Motivation

- Unprecedented urbanisation has brought cities that are already resource constrained under more pressure
- Population growth is linked to increased mobility
- Walking, a vital mode of transportation, has been identified as the basis of sustainable city that provides social, economical, and environmental benefits
- Understanding human interaction with the built environment is essential to promote and enhance pedestrian mobility

Sustainability

11 SUSTAINABLE CITIES AND COMMUNITIES



Data-driven (re-)development of urban spaces can provide a conducive environment for city dwellers to select walking as a means of transportation

13 CLIMATE ACTION



Urban-ecosystem that supports sustainable modes of transportation will result in reduced emissions.

3 GOOD HEALTH AND WELL-BEING



A healthy lifestyle and environment is proven to have positive impact on the mental and physical well-being of people

15 LIFE ON LAND

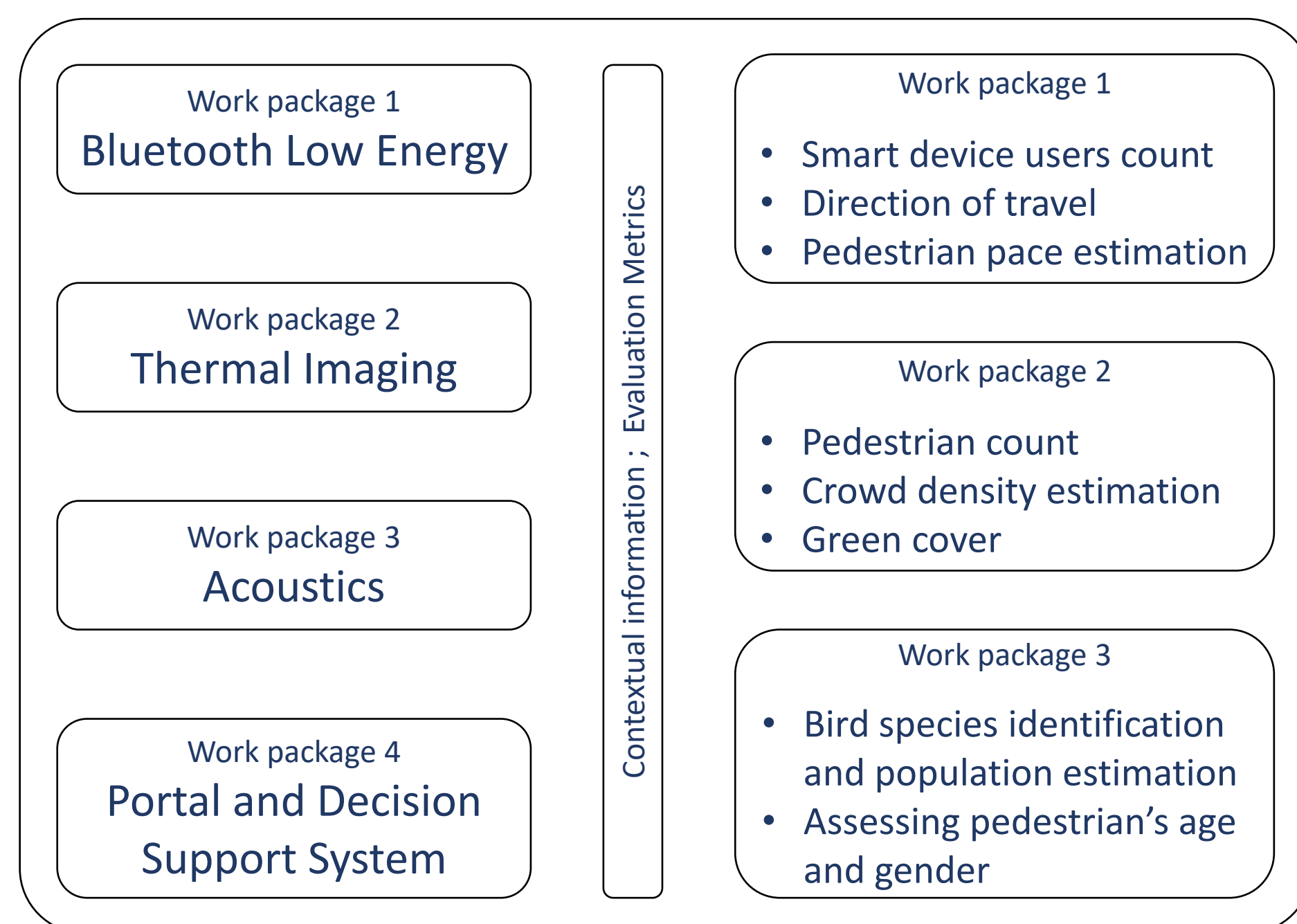


A means to assess interaction of pedestrians and urban biodiversity will support creation of co-habitable space

Partners and Stakeholders

- Local councils, and regional & campus planners
- Transportation authorities
- Environmentalists and conservationists, such as Bord na Mona

System's Design



GDPR

- *Privacy-by-design* approach embraced through conceptualisation, example: choice of sensors
- Behavioural characteristics are asserted at a macro-level and not individual level
- Raw data processed on local device and only asserted information is shared with cloud
- Hash encoding of data at local device level adds another layer of anonymisation

Outcome

