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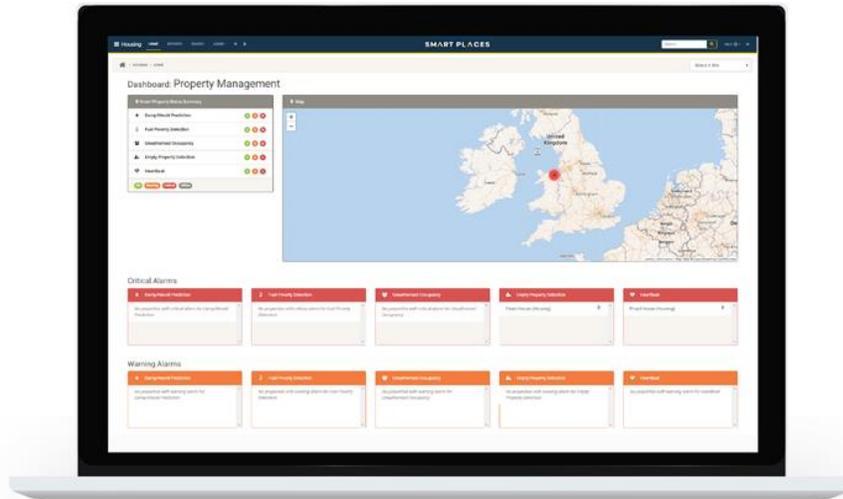
Monitoring health and happiness:
How technology is keeping families connected



WALES AUDIT OFFICE
SWYDDFA ARCHWILIO CYMRU

- Pinacl 'Smart City' IoT prototype - 2017
- Open Access IoT LoRaWAN Network Service
 - Council are just a customer
- Proof of concepts: Air Quality, Waste Management, Flood monitoring & Road Temperatures
- Social Housing – Newport City Homes 'innovators'
 - Property Management - Tempus
 - Legionella monitoring
 - Boiler pressure monitoring
- Future schemes:
 - Smart buildings
 - HVAC / air quality /
 - Energy efficiency
 - Smart Meters





- Property monitoring solution in surveyed properties
- Proactive remote management of property portfolio
 - Programmed automated alerting
- Sensors in main prime living areas
 - Measure temperature, humidity, CO₂
- Dynamic platform with both graphics and written data
- Onboard Knowledge Centre with proposed Solutions to Causes
- Damp & Mould predictions
 - Age, Geography, Orientation, Wall type,
- Abandoned property / Unauthorised occupancy
- Fuel poverty

A Global Social Care Challenge

- Over stretched, and under funded adult social care
- Struggling hourly domiciliary care providers
- Over stretched and over worked carers
- Care providers generally unable to respond dynamically to urgent cases
- Many extended families cut off from the state of care of their relatives





- Karantis360: 'Next generation' smart tech. in the care sector
- Learns what is normal behavior
- Increasingly understands the implications of changes and provides intelligent alerting
- Ultimately pre-empts conditions in advance



Karantis
360



- Significantly improved quality of adult care despite constrained social care and NHS budgets, and over stretched resources
- Reduced Hospital 'bed blocking' – costing NHS England £400M per annum Source: The Independent 2015
- Reduced pressure on GP surgeries
- Extended families kept in touch with their families' care





- Designed to transform the delivery of care for those who are elderly, infirm, living with Alzheimer's or dementia, or requiring hospital release
- Extending care 'touch' from physical to include remote non-intrusive 24x7 monitoring
- Karantis360 makes independent home living possible, and possible for longer, leading to happier and healthier lives
- Increases the levels of transparency for family members and providers while uniting agencies, caregivers, clients and their families to benefit all





- Maintenance of licenses
- Configuration of profiles
- CQC Reporting



- Digitized Care Reporting
- Care transparency
- Real-time care information



- 24x7 Non-intrusive Monitoring
- Real-time & historical insights
- Alert notification / handling



Karantis 360°

Filters

VIP status ▾

Visited ▾

Agencies ▾

Centre ▾

Charlie, 74	Harry, 69	Ava, 69
VIP: ●	VIP: ●	VIP: ●
VISITED: ●	VISITED: ●	VISITED: ●
SENSORS: ●	SENSORS: ●	SENSORS: ●
HOME: ●	HOME: ●	HOME: ●

George, 72	Greta, 72	Isabelle, 78
VIP: ●	VIP: ●	VIP: ●
VISITED: ●	VISITED: ●	VISITED: ●
SENSORS: ●	SENSORS: ●	SENSORS: ●
HOME: ●	HOME: ●	HOME: ●

← Back To Dashboard Refresh Now

Charlie, 74

VIP STATUS ● CARER VISITED ●

SENSORS ONLINE ● AT HOME ●

Dementia: No
Eye Sight: I require reading glasses
Hearing: Partially deaf
Mobility: Two walking sticks

Most Recent Visit

Carer 23 May 2019 14:04 [View All](#)

Alerts

Unresolved only Red Amber Yellow

No alerts so far

Front door	●	← Log
Back door	●	← Log
Hall PIR	●	← Log
Fridge door	●	← Log
Toilet	●	← Log
Kettle	●	← Log
Temp 1	●	← Log

Safety

Front door	Open
Back door	Closed

Activity

Index	Count
25	35
70	07:00

Kitchen Usage

Index	Count
25	35
51	08:40

Environment

Current	Day
21.1 °C	18.5 °C
82%	22.5 °C

Sleep

Bed Time	Up Time
22:05	06:17
6hrs12mins	98%

Bathroom Usage

Index	Count
5	6
18	07:50



Gateway

- Ethernet
- Optional 3G
- EnOcean radio

Safety

Instant action buttons



Environment

Temperature/
Humidity Sensor



Activity

Occupancy/
Motion Sensor



Bathroom Use

Vibration
Sensor



Safety

Magnet
Contact



Sleep

Pressure Mats



Kitchen use

Energy
metering –
Wall plugs



EnOcean sensors

- Energy harvesting
- Installer friendly
- Low maintenance
- Secure 128bit AES

We know George is moving in bed and is getting up as normal



We know George is using the bathroom a little less than normal - is he dehydrated?



George is hard of hearing



George is showing signs of life



George shares his IOT dashboard with his family and the care company



We know George is moving in his house as per his normal pattern



We know George has not used the fridge much today and has not been used his microwave or kettle - is George eating and drinking enough?



We can see George is safe and well, his doors and windows are closed at night



George – under Social Care

- George has Depression brought on by his wife's death
- Lives on his own

- ***Making independent home living possible, and possible for longer!***
- The world of care needs to change, the Global population is aging creating an imbalance between elderly people and the amount of available, affordable care
- 49 countries have an average life expectancy of over 80 years. We need to work smarter to deliver care within the available resources
- In the UK alone there are 10.8m people over 68, 97% of whom would like to stay in their own homes
- Our focus is on the use of IOT technology to aid carers and to provide families with better services and transparency



An aerial view of a city at night, overlaid with a network of glowing blue lines and nodes. The lines connect various points across the city, suggesting a global or interconnected network. The city lights are visible in the background, and the overall color palette is dominated by dark blues and greys, with the network lines providing a bright blue contrast.

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Diolch am wrando

Thank you for listening