



MimoCare case study

Improving support for independent living with the Intel® Intelligent Gateway™

www.mimocare.co.uk

Solution Blueprint
Internet of Things (IoT)

MimoCare have been working with Intel®, Wind River and Advantech using the new Advantech UTX-3115 Based on Intel's IoT Intelligent Gateway™ Platform to build a powerful solution for the telecare and telehealth sectors.

Case study:

Arnold, now in his late 80's, is the fulltime carer for his wife Mavis, 86 who has very little mobility and failing eyesight. The family becoming increasingly concerned that should anything happen to Arnold, both would need to be taken into a care home. Their daughter lives nearby but with a fulltime job is unable to look in on them regularly to ensure they have not had any difficulties, especially overnight.

Arnold and Mavis' wishes:

- be together in their own home
- maintain independence for as long as possible
- know that support would be available when they needed it

The family needs:

- peace of mind that they were both safe and secure
- reassurance that Arnold was coping with being the main caregiver
- to know straightaway if urgent help was required
- to ensure that external care visits were timed to offer maximum support

The solution:

The family was introduced to MimoCare and after sensitive conversations with Arnold and Mavis to reassure them of complete privacy, the sensor support system was installed in April 2014.

MimoCare uses tiny sensors placed around the homes of elderly and vulnerable people to stream data directly into the analytics platform. Information about activity patterns and changes in behaviour is then provided to families, carers and clinicians, giving them invaluable insights into the wellbeing of the people in their care.



The sensors are placed strategically and unobtrusively around the cared-for person's home building up a database of lifestyle information without invading privacy. Packets of data from the sensors are streamed back to the cloud database after being checked by a local alert system.

The analytics engine trawls the data, learning typical habits such as sleeping hours, number of visits to the bathroom in the night, hours sat still without getting up to stretch legs, access to the fridge to get milk for a cup of tea or to make meals and so on.

'Edge analytics' runs locally in the home, making decisions about whether to send a text message alert to family or carers if activity doesn't look normal. For example, if the fridge has been left open, cooker left on or if the person is not up the morning by the usual time.

1-2-3 | EASY
SETUP

This platform provides an incredible opportunity to change the lives of elderly and vulnerable people by providing a support system that gives reassurance, enabling early intervention and with minimal intrusion and maximum support.

Early results:

Almost immediately the sensors were installed, they identified issues that weren't previously obvious to the family. For example, the fridge was often running at unsafe temperatures for food that was being consumed a couple of weeks after the 'best before' date. Simply setting the thermostat low enough and monitoring the temperature made the situation safer. The family could also see that the fridge was being accessed at regular intervals for meals and drinks.

Benefits of MimoCare:

- Reliable – with long battery life, sensors can easily be moved to new locations without any loss of performance (for example, Mavis's bed sensor was relocated when an adjustable hospital bed was installed in their home).
- Personal – the system builds up a wellbeing profile that is unique to the individual user and alerts can be tailored to address particular needs, key trends and patterns
- Alerts – if there is a sudden change in behaviour or no activity between expected times, an alert will be triggered
- Unobtrusive – the sensors are small and blend into the background.



Feedback and Value:

The family receive alerts via text message if the readings in their parents' home deviate from expected patterns. Their son Ben said *"it's reassuring to be able to keep an eye on Mum and Dad when I can't be there. The data coming in from the sensors has been used to build up a picture of what's normal for them so they don't feel that we're interfering but it gives them the reassurance that help will be there if they need it."*



Probably the best endorsement comes from the couple themselves. Arnold said *"I was worried that the system would be intrusive but actually I don't even notice the little MimoCare boxes. It is reassuring to know that if anything happens to me, the family will know and be able to call someone to help Mavis."*

Mavis said *"I'm so glad that we are able to stay at home together and I know that the family is much happier now that system is in place."*

Medical needs that MimoCare can help with:

- Movement sensors in the bed and living room chairs indicate whether people are moving – thrombosis, ulcers, bed sores, circulation issues
- Sleeping/disorientation – moving around at night – no movement during the day
- Interrupted sleep and unusually high frequency of visits to the bathroom – possible urinary tract infection or anxiety
- Room temperatures – ability to check if any rooms are too cold, or if there any problems with the heating system
- Cooker sensors – ensure that the hob has not been left on
- Sleeping patterns - number of times they get up at night

MimoCare is different. It uses analytics to identify the normal pattern of behaviour and triggers alerts when there are events outside that normal pattern or predefined scheduled.



Cloud Analytics:

Aggregated data from multiple homes and people can be used to detect patterns, determine care needs, predict events and even used for research. The data can be accessed in anonymised, tokenised format to ensure complete privacy. As the Internet of Things develops insights will enable individuals, companies and cities to make smarter, safer homes for our families.

If you would like more information or a demonstration of the MimoCare products and services, please visit our web site at www.mimocare.co.uk and complete the contact form.

