



## When it matters most

**We are all familiar with hearing our car radio crackle as we move out of range of the station transmitter, or our mobile phone call end as we walk between two large buildings. We know, and accept, that wireless systems do not offer perfect connection all of the time. However, as wireless communications become more prevalent in the medical environment, the consequences of link failure are far more significant and dangerous.**

One solution to the issues of wireless link reliability is compression, which causes fear amongst medical device companies. However, by confronting these fears and adopting optimised compression techniques the reliability of a wireless link can be improved whilst maintaining system performance.

Optimised compression adapts the level of compression to the quality of the wireless link. It allows the system to maintain the valuable information in the data transmitted, for example maintaining critical information in an ECG trace, whilst discarding the 'noise'.

Forward error correction adds an additional layer of reliability to a wireless medical system. Using this technique, the receiver is able to detect and correct corruption of the valuable information, maintaining performance as the signal quality degrades.

Reluctance, among some companies, to adopt wireless technology is not a total surprise. Although data integrity is important in consumer products, it doesn't always appear top of the list. However, by applying advanced radio performance enhancements to the design of the wireless link, it is possible to create a system that will perform even in the most challenging environments.

Those taking the plunge are often surprised, not just at how reliable wireless can be, but also at the plethora of opportunities it opens up.

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## Collaboration is key

Following a recent workshop, hosted by Cambridge Consultants, leaders from across the European diagnostics industry concluded that whilst the market for over-the-counter (OTC) and consumer diagnostics tests was poised for exceptional growth, it would remain out of reach unless diagnostics, pharmaceutical and consumer companies collaborated. The delegates identified that this collaboration will lead to the development of a new generation of products aimed at the public, who are becoming increasingly interested in monitoring and managing their own health.

At the moment the global market for consumer diagnostics is predominantly focused on glucose and pregnancy testing, however, the delegates discussed that with the prevalence of conditions such as cardiovascular disease, high cholesterol and obesity, there is a major opportunity and patient benefit for in-home testing and monitoring. These conditions, which will soon be the leading causes of death and disability, can be eliminated or better treated through early identification and better management.

Diagnostic innovation usually takes place at an incremental level but is always aimed at the same client base – the healthcare providers and skilled clinicians. This new market sets the industry a whole host of new challenges, including designing for consumers, outcome studies and channels to market. It is for these reasons that collaboration will be so important, as developing a new market segment all by oneself is a costly and risky process.

Our plan is to re-run this workshop in the US this autumn and then combine and contrast the results, providing a global perspective on the shape of things to come.

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