

Diabetes II – The Oracle Open World demonstration

Diabetes II is becoming a huge healthcare problem with 50 million people already diagnosed in Europe and USA and many more either undiagnosed or at risk. Diabetes is a chronic condition and incurable. Left untreated, it has a devastating impact on quality of life and drives high costs for healthcare providers.

Early intervention and close cooperation between patient and professional healthcare providers makes a big difference. With careful management, the worst effects of the disease can be prevented and patients can live a relatively normal life for many years.

Payers are increasingly prepared to reward clients who participate actively in managing their Diabetes II. Active participation means adjusting life style and diet, and learning to monitor their medication intake and vital signs – particularly blood glucose levels.

Communication between patient and professional is central to an optimal outcome. Diabetes II is a complex condition and is managed by careful adherence to diet, fitness programs, and medication. Vital signs such as blood glucose, blood pressure, and weight need to be monitored regularly. A professional can help by following the vital signs and giving coaching, improving outcomes.

At Oracle Open World, Cypak, Oracle, and other leading healthcare companies demonstrated an end-to-end solution that keeps patients and carers in close communication.



Continua Health Alliance

Cypak and Oracle are members of the Continua Health Alliance which is developing global standards for interoperability.

The Diabetes II demonstration was made with interoperable products from Continua promoters Roche (world leader in blood glucose monitoring) and A&D (leader in blood pressure monitoring).

Cypak delivers enabling technology for medication monitoring, and a Continua compliant interface for vital sign monitoring.

Medication compliance

Medication compliance is often called “the other drug problem”. Many studies show that 30-60% of people do not adhere to prescribed medication, even when their life is in danger.

Cypak solutions help clients, families, and professional healthcare providers to improve. A low cost disposable electronic device is embedded in pharmaceutical packaging to:

- Record dosage events
- Remind when the next dose is due
- Communicate the adherence history

Memory is a main cause of poor adherence. Recording dosage events gets the facts on the table. Often clients do not remember accurately when and whether they took medication. They are often unable, sometimes unwilling, to give an accurate report to their carers.



Continua module with battery and buzzer

Some clients make a deliberate decision not to adhere. Motives are complex; feelings about efficacy, belief in self-dosing, concern for side-effects, peer pressure, preference for alternative therapies are just some of the many reasons noted in studies. Medication monitors enable client and professional to review and

discuss the benefits of adherence objectively, improve understanding and reach agreement.

A typical Cypak module is embedded in standard packaging and the client needs no instruction. The electronics can also be mounted in a variety of pill dispensers, blister packs, or automated medication cabinets.

In other applications, for example in Clinical Trials, the module is integrated in a questionnaire or patient diary to record patient answers to questions as well as record dosage events.



A Cypak powered pack: Stora Enso DDSi

## Reading recorded data

A wide range of solutions are available for reading and displaying the recorded data.



Continua compliant USB reader

The Continua compliant USB reader will send recorded data to any manager software using a standard USB connection. Typically the data would be read by a PC, either in the client's home, in the doctor's office, or at the pharmacy. Additionally it could be transported over the internet to the healthcare provider's system.

Younger clients may prefer to check their history with an NFC enabled mobile phone. Manager software can be embedded to transport data to a service provider.

## The Compliancy Connection



Commercially available NFC enabled mobile phone

A Cypak Continua Compliant USB reader will support other Continua certified monitoring devices, including blood pressure monitors, blood glucose monitors, and weight scales.



## Technical information

The heart of a Cypak system is a tiny ASIC measuring 8x8x9mm in a standard package.

This unique sensing device is made by Cypak and supports 32 digital I/O channels with a broad 0.5mm lead pitch for printed sensors. The chip contains a microprocessor and 32kByte memory. Appropriate firmware drives standard HF RFID protocols such as 14443, NFC, 15693, and UHF.

## Usage models

The Compliancy Connection is valued by:

- The clients themselves
- Families and carers
- Doctors and pharmacists
- Healthcare providers
- Payers

Depending on the individual situation, adherence records can be routed to one, some, or all of the above. Cypak will use the Continua driven standards to present data in standard format for use privately or in health record systems.

## Contact

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