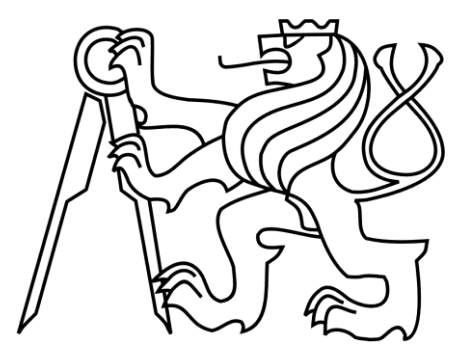


Connecting Diabetes Telemedicine System to a Nonstop Emergency Helpdesk

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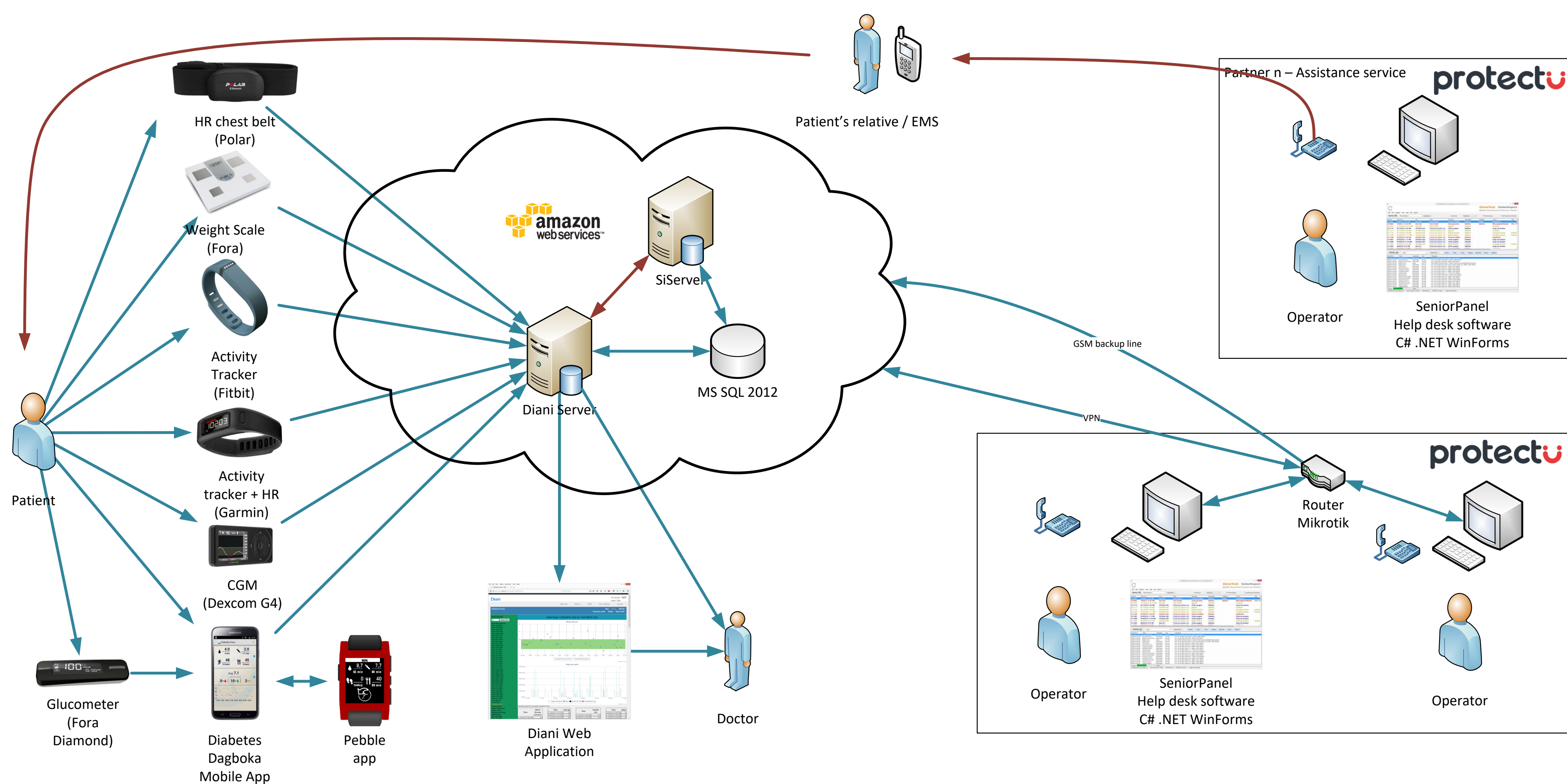


Introduction

It recently becomes possible to read the current blood glucose level (BG) from standard continuous glucose monitoring systems (CGM). It can be made either via official services like Dexcom Share or using DIY approach like NightScout. These systems are focused on sharing data among few people whereas it is mostly the case of parents checking remotely BG of their T1D children. The problem is where a T1D patient with life threatening nocturnal hypoglycemia does not have anybody who could take care of him/her.

Method

We connected the Diani telemedicine system to Protectu - a nonstop emergency helpdesk service. Real-time BG data are collected using xDrip device together with a mobile phone that reads the data from a standard Dexcom transmitter. The system is implemented as a software module for the Protectu software.



Results

In the initial pilot phase, we have configured several simple alarm-generating scenarios:

- comparing the most recent BG with a hypo/hyper threshold
- automatically revoking alarm if the value returns back to the acceptable range
- dropout alarms when the data are not being received for a period of time

In case of alarm activation a trained personnel from the Protectu helpdesk tries to phone call the patient or his/her contact persons to provide assistance to the patient. Operators can resolve or postpone the alarms.

Conclusion

All parameters are per-patient configurable, enabling tailoring the system to the needs of each individual patient. We are currently investigating more advanced alarm-generating algorithms that would take into account other variables such as actual physical activity or registrations from diabetes diaries.