

# Smart Water Bottle Converter

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## Technology description

### Executive Summary

A more accurate awareness of an individual's hydration could help motivate them to stay hydrated in a variety of settings. Quantifying the intake would provide meaningful feedback to aid in hydration. To address this need this technology converts a normal water bottle into a "smart bottle" capable of tracking and measuring fluid intake of a user. The smart bottle is able to; identify and track the sips taken from the bottle, compute the water intake statistics, show such statistics on a local display, and send corrective feedback to the bottle's user when the tracked intake amount is low. Users can also record hydration statistics through a wireless connection with a smart phone and stored for later use.

### Description of Technology

This technology is a device which would convert a regular water bottle into a "smart bottle" capable of tracking fluid intake and providing statistical feedback to the user. Michigan State University has developed a smart bottle converter consisting of an elastic band with an embedded tri-axis accelerometer to track orientation changes of the bottle over time. Whenever the bottle moves, the orientation change would be detected and recorded as a signal trace. A pattern recognition algorithm deciphers signatures from the accelerometer signal trace allowing for only "sips" to be recorded as intake. The device includes Bluetooth to allow the data to be transferred and accessible for further use.

## Application area

Monitor hydration for:

Elderly

Athletes

Health conscientious individuals

## Advantages

Quantified reporting – quantified reporting of fluid intake and output is an integral part of patient care in many healthcare settings

Does not require a special bottle – converts your own bottle to a smart bottle

Long lasting with low maintenance – current products often rely on nozzle impellers to determine water flow. Such parts are vulnerable to clogging due to deposition or calcification from hard water and require periodic maintenance.

Data accessibility – the smart water bottle converter is able to store information. In a healthcare setting, the water intake record could be integrated with a patient' s electronic medical record

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