



**Swiss
Competition
2015**



iCAN'15 Swiss Contest – Project Abstract

Project Title: **SwissMix**

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Motivation

Enjoying new kinds of drinks and exchanging new cocktail recipes with friends is common in entertainment. Also mixing soft drinks for kids with the right proportion of water, juice and syrup could be helpful for many families in their daily life. However, not all of us will remember exact proportions and recipes at all times.

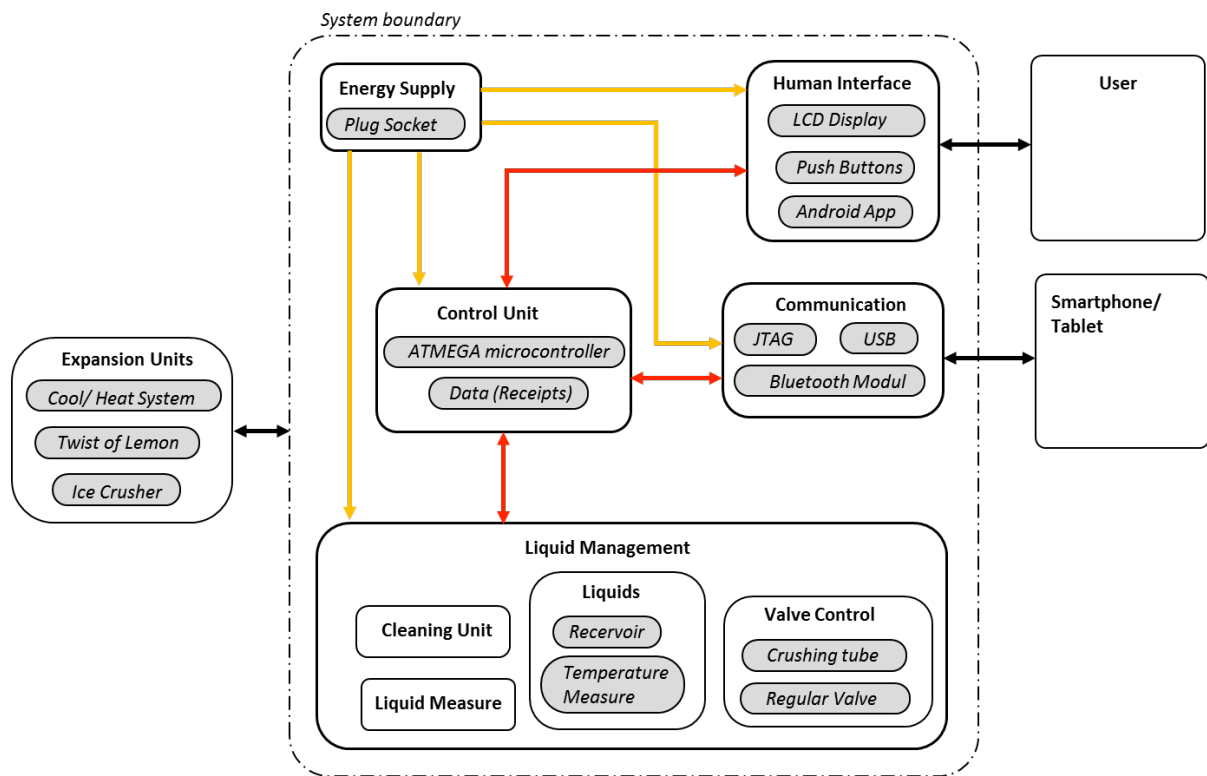
This can be solved with a new kind of beverage mixer for households. Add bottles with different liquids, load your recipe on your app and let the SwissMix do the rest.

Hardware

The basic principle is based on mixing liquids with different viscosities and densities in a precise and repeatable way. To this end, fluid handling is needed. Different measurement principles will be tested for controlling the fluid quantity. Pressure and force sensing or distance metering with infrared sensors are methods under consideration. The best principle will be used for the prototype. Also a control unit and communication module to a mobile phone will be integrated. The following list gives an overview about the required materials:

Quantity	Material	Costs (assumption)
1	Test stand	50.-
3	Bottles	5.-
3	Liquid valves and tube	25.-
3	Pressure sensors	60.-
1	Force sensors	60.-
3	IR diode and photodiode	10.-
1	Control unit with Bluetooth communication	50.-
1	HMI	20.-
	Total – costs material	280.-

The block diagram below shows a possible concept for the implementation.



Software

Firstly, an on board control unit for volume flow control will be implemented. It should fulfil an exact amount of fluid into a given container. Secondly, an intuitive human interface will be developed, for easy choice among pre-determined drinks. A mobile application will be created to allow the user to upload new recipes, and to share with other users as desired.

Timetable

A project timetable is proposed below. A working prototype is foreseen in March 2015, leaving buffer time for optimization and refining until 2015.

