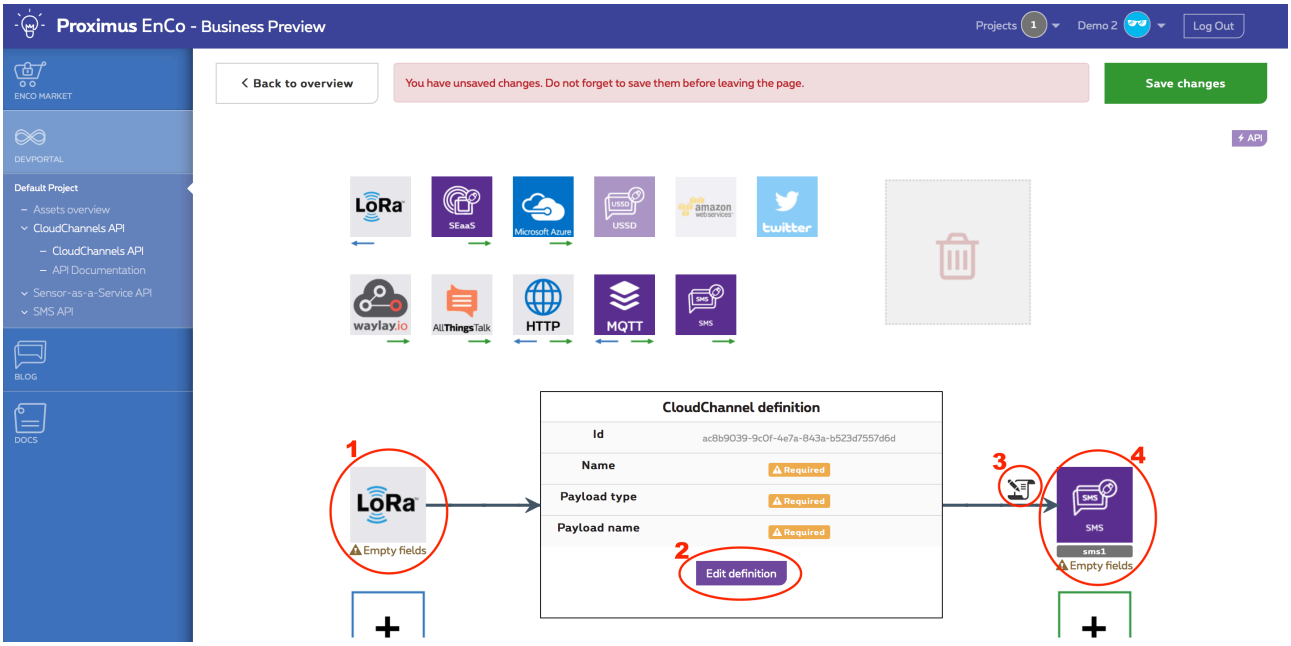
Example: SMS warning

This experiment shows how the LoRa Development Kit can be used to send SMS messages when the temperature reaches above a certain temperature.

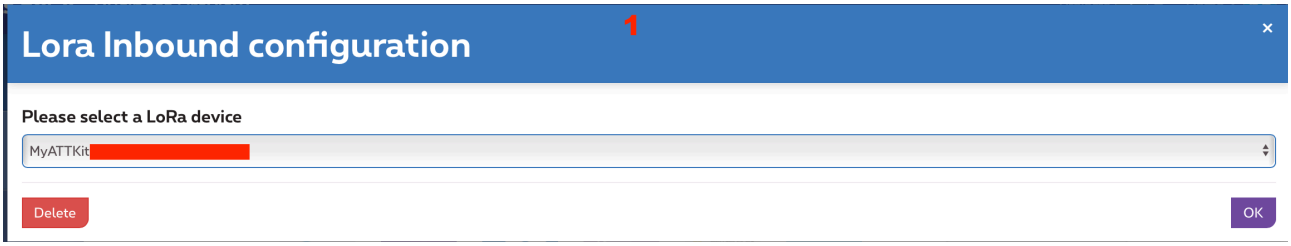
First of all it is encouraged to follow the AllThingsTalk demo (http://docs.allthingstalk.com/tutorials/setup-lora-rapid-development-kit/) first so that everything is correctly set up and ready to go.

Configure the CloudChannel

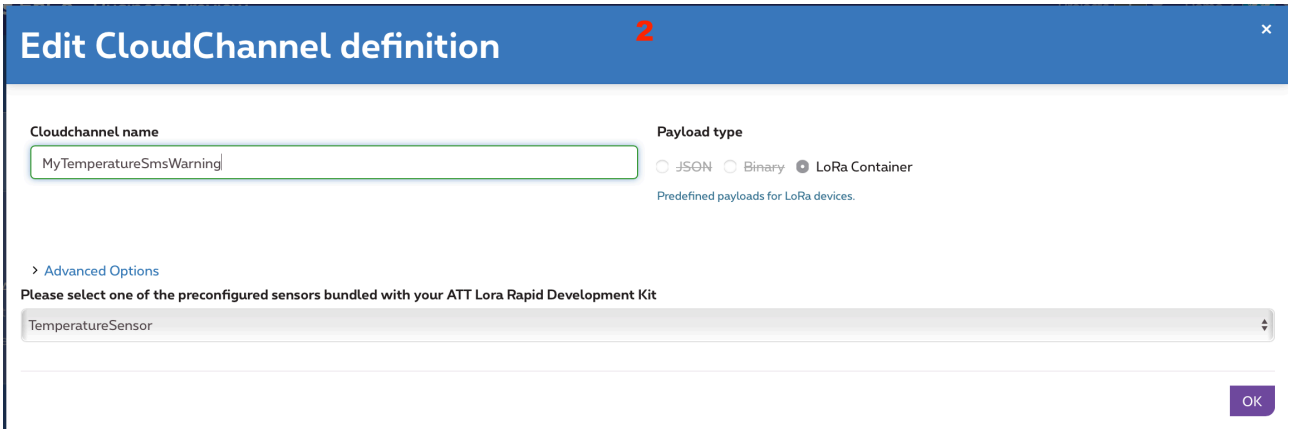
- Make sure you are subscribed to the SMS API, CloudChannels API and the Sensor-as-a-Service API on the EnCo Marketplace (https://market.enco.io/marketplace)
- If you've completed the AllThingsTalk demo your device is already registered on your EnCo account. If it isn't, a walkthrough can be found in the demo (http://docs.allthingstalk.com/tutorials/setup-lora-rapid-development-kit/).
- Now that your device is registered, you need to add a temperature sensor to your device. In the DevPortal go to Sensor-as-a-Service API/Devices, select your device, press the button "Create a sensor" and select the TemperatureSensor.
- The next step is configuring a CloudChannel that gathers the data from the temperature sensor and sends an sms if necessary. Go in the DevPortal to CloudChannels API/CloudChannels API and press "New CloudChannel". As input we select LoRa and as output SMS. Configure the CloudChannel as seen in the figures below.



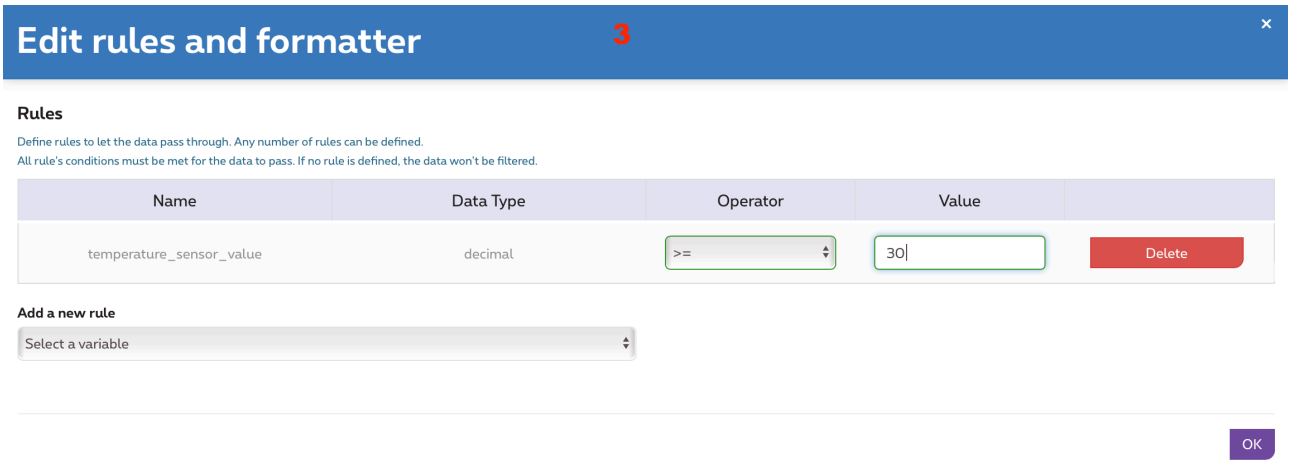
This is the overview of the CloudChannel. Some information is still missing, by pressing the buttons that are marked with the red circles, the missing information can be added.



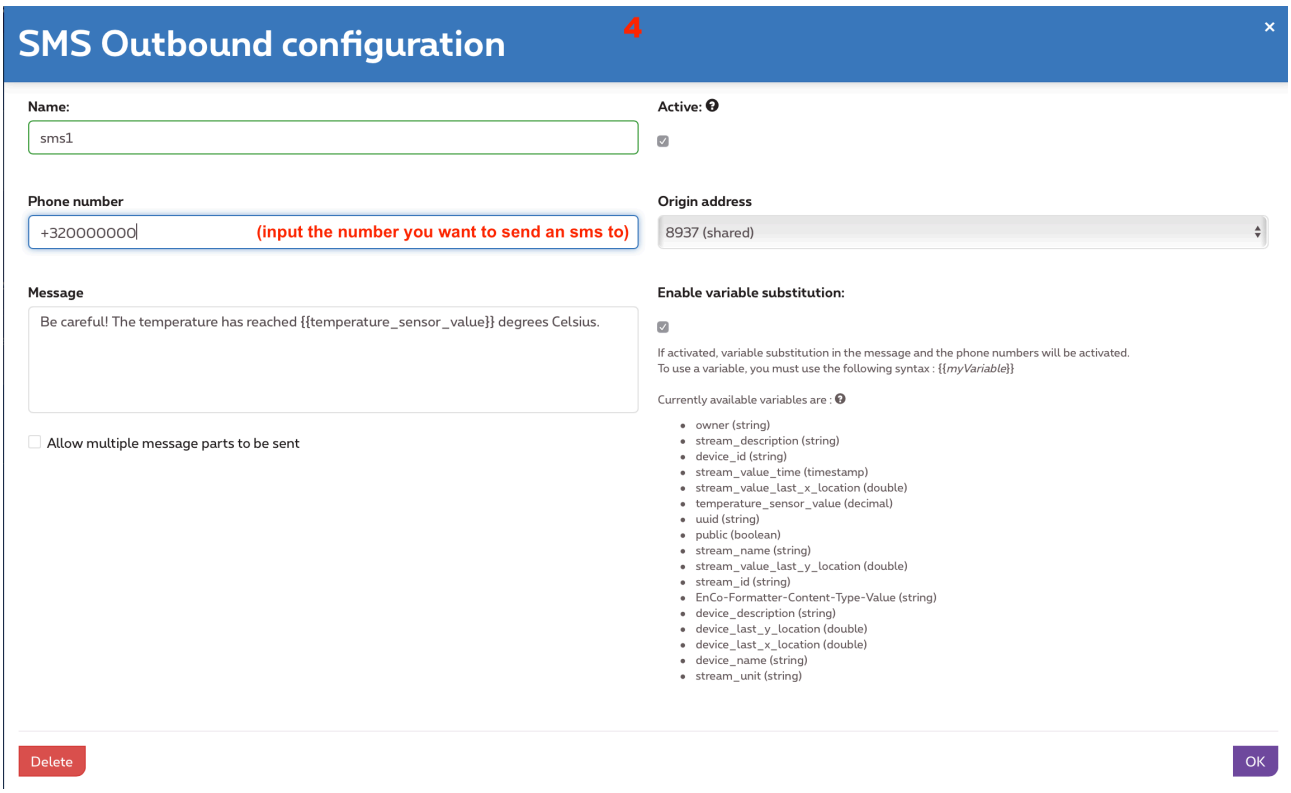
Select your LoRa Device. If it's not possible to select your device, try registering it again following the walkthrough on http://docs.allthingstalk.com/tutorials/setup-lora-rapid-development-kit/.



Select the TemperatureSensor as the preconfigured sensor. You can choose the name of your CloudChannel freely.



Set some rules of when to send an sms. In this example the CloudChannel will send an sms if the temperature exceeds or is equal to 30 °C.



Finally the sms needs to be configured. The phone number is the number the CloudChannel will send an sms to.

Configure the microcontroller

Great, you have successfully created your own CloudChannel. Now we can focus on sending the data from the microcontroller to the CloudChannel.

- First download the script and add it to your sketchbook. When you open it you can see that the project exists of two files, a TemperatureWarning.ino file and a keys.h file. Enter your device keys in the keys.h file. These can be found in the DevPortal under Sensor-as-a-Service API/ Devices and on the top of the page there is a button “Keys”.
- We are using the TPH sensor. For this sensor two extra libraries need to be added. They can be found on https://github.com/adafruit/Adafruit_BME280_Library & https://github.com/adafruit/Adafruit_Sensor. Download them as ZIP and import them as libraries in Arduino like you have done in the AllThingsTalk demo.

- We are almost done! The last step is connecting the TPH sensor to the microcontroller as seen in the picture below. It needs to be connected to the I2C port (SCL/SDA). If it's still unclear which port to connect the sensor to, have a look at the picture at the top of this page.
- Connect the micro controller to your pc and run the code! If the temperature of the sensor gets above 30°C you will get an sms. Check the serial monitor (shift-ctrl-M) to keep track of the data sent to the CloudChannel.