Symbisa Brings Physical IoT Sensing and Tracking to the Office

Version 2

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IoT - It's not always about Arduino, Raspberry Pi and ESP8266

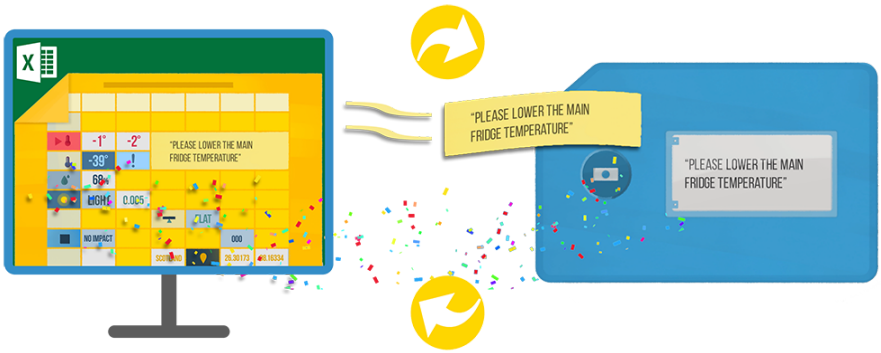
Whenever someone talks about the Internet of Things, and you get past the jokes about the toasters and fridges, and beyond the fear-mongering concerns for security (though security is always important) we then get down to how people actually use the IoT. On the element14 Community you'll see Design Challenges where people use Arduino, Raspberry Pi, ESP8266/32s and all sorts of micro-controller hardware with programming languages such as Python, C++ and JavaScript frameworks to develop solutions that involve internet connectivity and control. With a series of sensors the hardware can then talk back to scripts and dashboards that inform users or the public about the environment around them and allow them to take informed action, or frankly just for fun.

Setting up hardware for the Internet of Things is only one step in the infrastructure of feeding back the information that you want to know, so what can you do if you're only interested in processing that information and you don't have the resources or experience to setup the hardware from scratch? In fact, how do you manage to support this kind of infrastructure at scale, if you have hundreds, if not thousands of devices.

Introducing Hanhaa's Symbisa

There's no coding. I figured it would be best to point that out from the start.

Based on the hardware from Hanhaa's Parcelive platform, the Symbisa product (datasheet attached below) gives you access to the information provided from the on board sensors to monitor and track whatever and wherever you have the hardware situated. Each device has its own identifiers and the onboard e-ink display can allow you to customise the display to notify the end user of the product of either the status of the sensors, or appropriate messaging to act upon. In the Parcelive eco-system this hardware is used to display addresses and/or barcodes that can be scanned.



The module, specifically contains the following sensors or sensing elements/abilities:

- Humidity and Temperature
- Pressure and Light
- Tilt / Orientation
- GPS Location and Altitude
- E-Ink Display
- Globally supported GSM cell network (currently data payloads are supported only in America)
- Lithium polymer battery

From these sensors we can determine factors such as whether the item has been knocked, if it has fallen from height, and potentially act as a pedometer if necessary. The device can send this information back across a 2G cell network which is more than adequate for the data being sensed and transmitted. The data is stored securely by Hanhaa where you can then consume and access it, with the Symbisa platform you are in charge of the data captured and what happens to it.

The data is reported back at various intervals, this can be as often as you want, from seconds up to minutes, hours, days, weeks, even months. This allows for your data credit allowance to last a very long time depending on what your use-case is. Obviously if you're doing say, a short journey with the hardware you might want more frequent reporting or recording of data, than if you're on a long haul transport or a static installation.

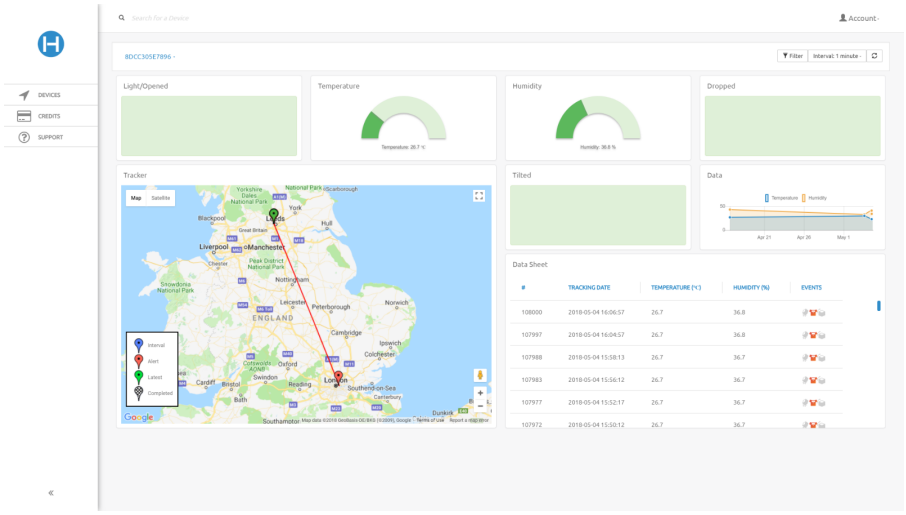
Symbisa - Pairing the Internet of Things With Microsoft Excel

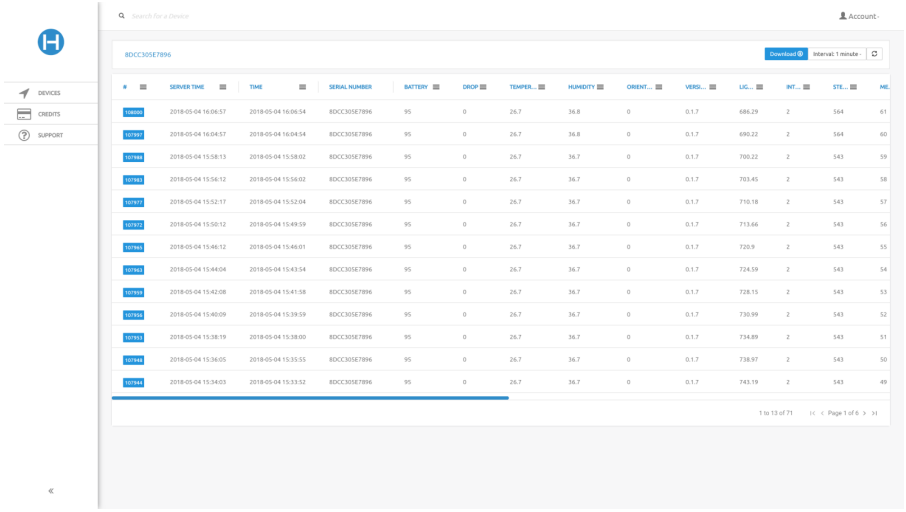
Parsing the Data

When you buy the Symbisa hardware, sign up to Hanhaa's website , then register your device, you will gain access to a dashboard of your hardware. The reference to the hardware can be shared across accounts, so it does not have to solely be allocated to one user.

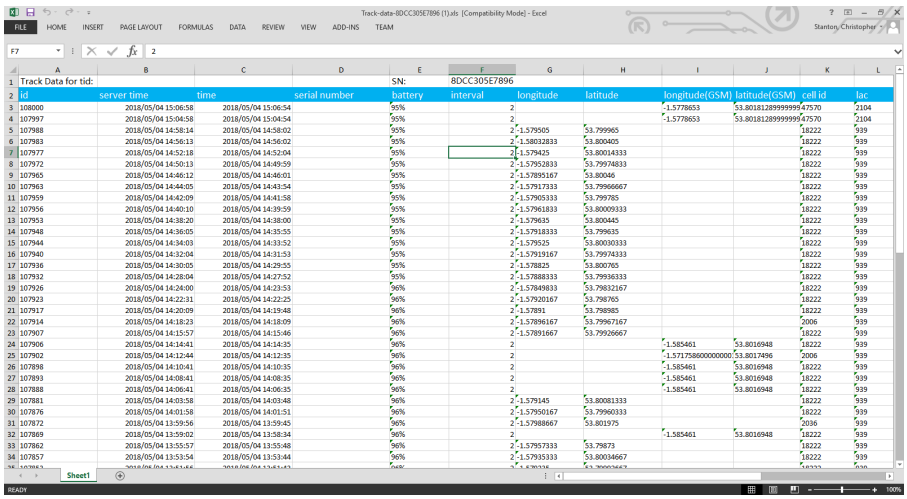
For the hardware to start talking back to the dashboard though, you will need credits. The allowance that is metered for how the hardware talks back to the Hanhaa platform is all about credits and at present, one credit is one update or synchronisation of information. If you buy your hardware from Farnell, it may come pre-loaded with an amount of credit, though you'll have to purchase more after that.

Once there are credits on your device, you should be able to set the interval of the hardware as to when it updates, and you'll be able to see it in the dashboard when it's turned on (a long press of the singular button on the hardware turns the device on or off).

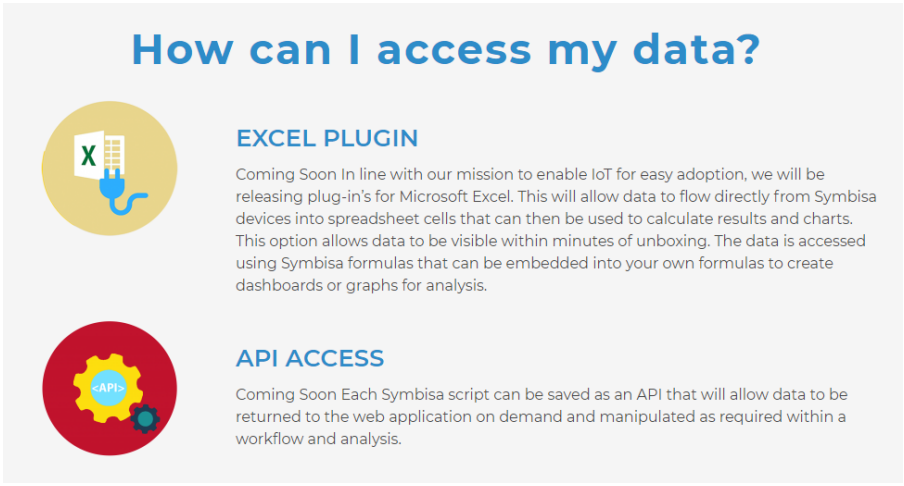




Thanks to Hanhaa's GSM network we can receive updates, in this case they were set to 2 minute intervals. The hardware was turned off for part of the journey taken between london and leeds (I hadn't charged it...oops) and once I turned it on at the destination it started to receive info'. The dashboard is currently setup more like Parcelive because it's pre-release hardware, but what you can do is download the data and see it in its raw format.



Taking it One Step Further



Development is under way to bring even easier access to the data presented by the Symbisa hardware, soon, if not already, you will be able to load up Microsoft Office 365 / 2016 with Microsoft and manipulate the values directly within the spreadsheet. All you will have to do is login to the Symbisa platform once the add-on is installed and type '=' in a cell to start inserting your Internet of Things data. No programming knowledge required. No scripting needed (though if you're au fait with that sort of thing in Excel then go wild!). You'll be able to pull it into analytics, statistics and whatever else you want to do by analysing the data from your monitored, internet of things devices.Excel an

If you are more technically minded, then API access is on its way, though it'd help to know what exactly you need and how you need to interface with it.

Want to know more?

Keep your eyes on Hanhaa's Twitter account and website ! If you want to pre-register your Symbisa account before picking up the hardware, you can do so here .

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