Link 15.2 Making Sense of Data Using the Context Box

Here is a string of data captured:

18, 10, 17, 17

The data is meaningless without context.

Dey & Abowd (2000) suggest that there is a primary context and a secondary context. The primary context comprises, *location, time, identity and activity.*

In this example the:

- *Activity* is the collection of data from a temperature sensor.
- *Time* is when each reading was taken from the sensor.
- *Location* is the physical location where the data were collected (the physical location of the temperature sensor).
- *Identity* is the unique code identifying the temperature sensor.

This is shown in Table 15.2.1.

Table 15.2.1: Primary Context

Identity	Location	Time	Activity
TS 0158	Room 138	08.30	18 Centigrade
		09.30	10 Centigrade
		10.30	17 Centigrade
		11.30	17 Centigrade

The data can be framed in a box shown in Figure 15.2.1.

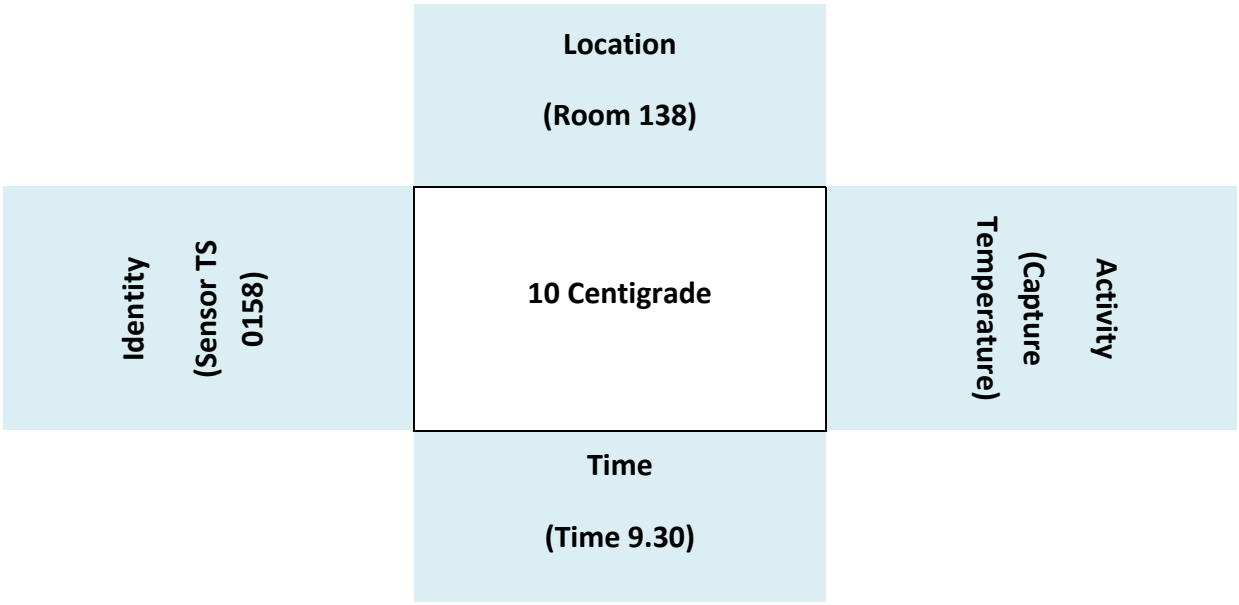

Figure 15.2.1 Initial Event Box

The primary context shows that the temperature in the room changed, but it does not explain the context of *why* the temperature changed. By looking-up further information about room 138 we can find out about the secondary context. For example, the room may have other sensors in place such as door entry system or cameras. We can then determine other events that occurred at the same time as the temperature changed, shown in Table 15.2.2.

Table 15.2.2: Secondary Contexts

Identity	**Location**	**Sensors in Place**	**Sensor Identifiers**
Room 138	Building A	Temperature Sensor Door Open Sensor Camera	TS 0158 MD 0015 IPC: 1155487521
Identity	**Location**	**Time**	**Activity**
MD 0015	Room 138	09:30	Status Monitor = Open
IPC: 1155487521	Room 138	09:30	Photograph Taken

The secondary context provides more data but the relationships among the data need to be explored to more fully define the context in which the data were captured. The context box provides a means to start to explore the relationships between the data collected.

	Goal: Intentions of person opening door		
Artefacts: Temperature Sensor Door Open Sensor Camera	**Role:** Person opening the door and their intentions.	**Time:** 09:30	**Location:** Room 138
	Activity: Door opening. Camera taking photograph. Temperature falling.		

Figure 15.2.2: Initial Context Box

Figure 15.2.2 shows that data is needed about the person who opened the door (captured in the photograph taken by the camera), their role and intention (goals). For example, the actor in this context may have been Larry Hughes entering his office to access his computer. Alternatively, the actor could be a disgruntled employee entering the office to steal something.

A person's goals and role change in response to changes in the context. In Table 15.13 Larry is working whilst on a train. If an incident occurred on the train, Larry's goals would change and the rules that govern the situation would change. The context provides a model in which to explore how changes in one element of the context can influence the status and behaviour of other elements.

Reference

Dey, A. K. & Abowd, G. D., (2000), 'Towards a Better Understanding of Context and Context-Awareness', Proceedings of the CHI 2000 Workshop on The What, Who, Where, When, and How of Context-Awareness, The Hague, Netherlands, Apr. 2000., ftp://ftp.cc.gatech.edu/pub/gvu/tr/1999/99-22.pdf, accessed 21 September 2013.