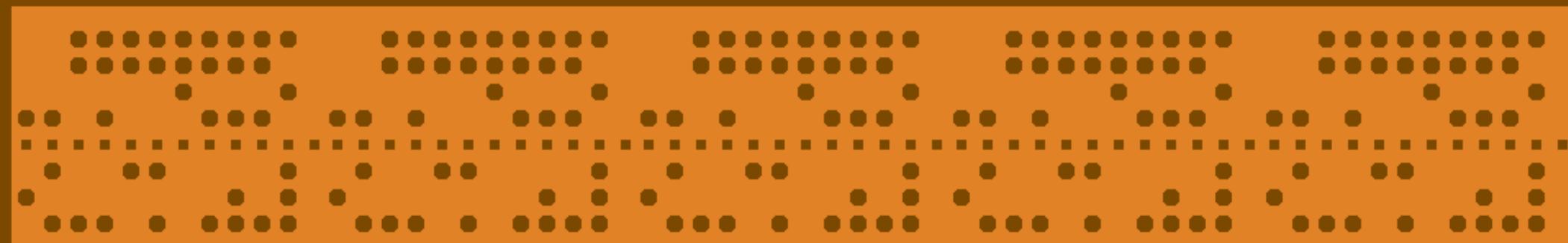


Climate data collection and management

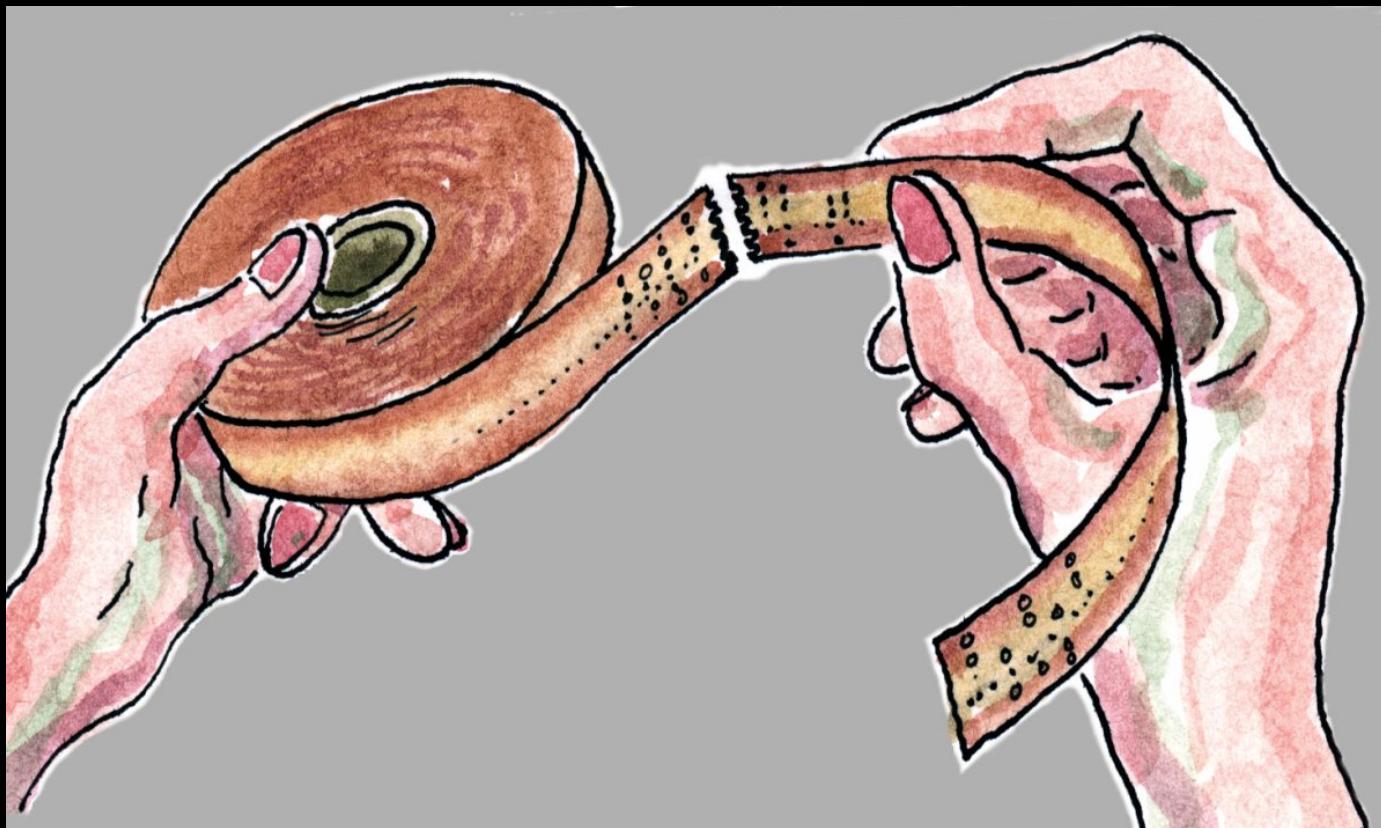


We need to put in a
data logger for three months
to check if it is suitable for
museum storage

In the beginning was paper tape



It was human readable but the material was not durable, being impregnated with oil to lubricate the mechanical reader



IBM preferred stiff durable card, perforated with one line of text
It was physically durable but the information could get garbled



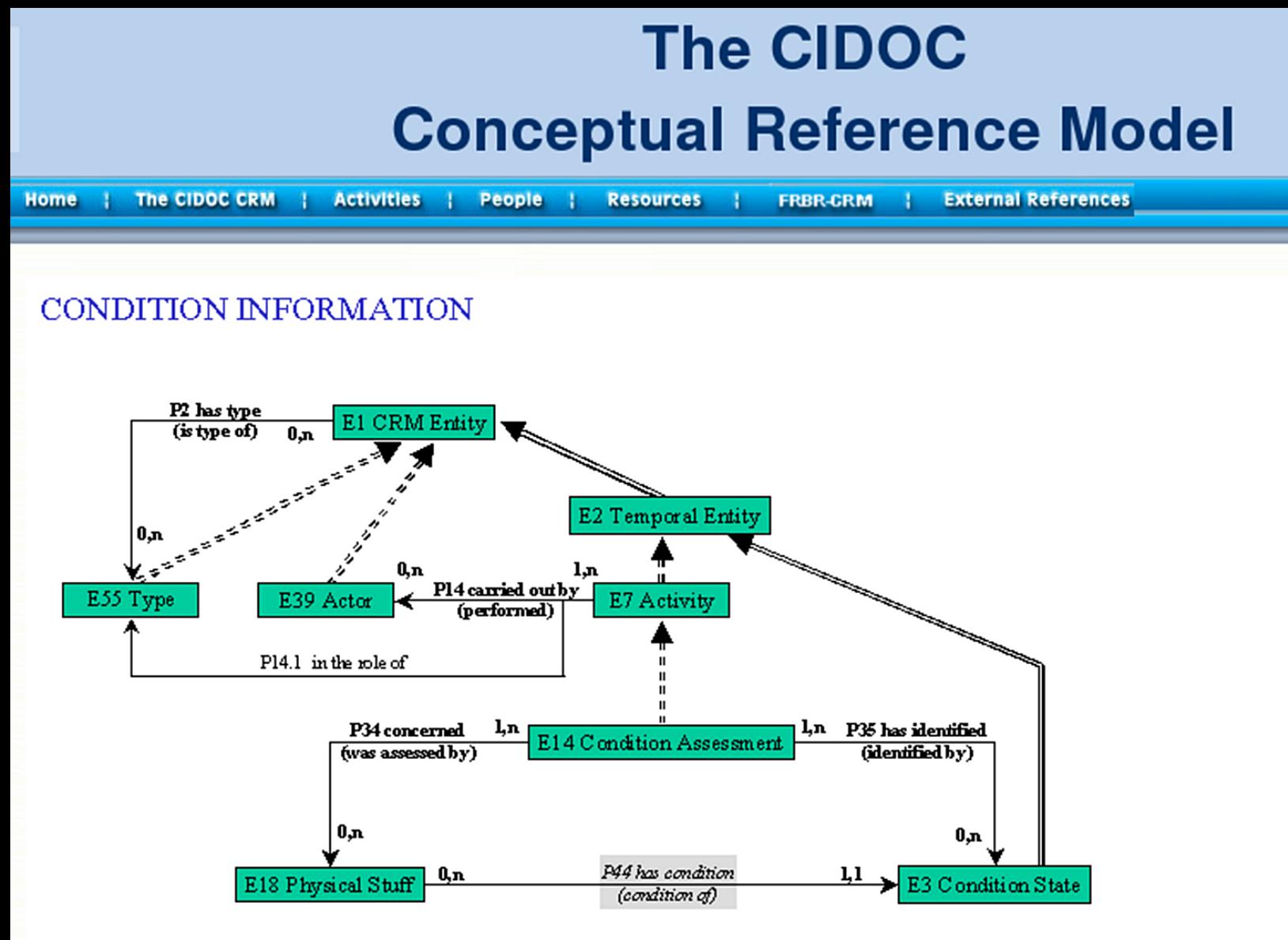
In those days the code was simple: just 128 ASCII symbols
You could do anything with this simple set, including art



ASCII contained only English characters, so it was soon extended to include symbols from other languages.
The resulting chaos led to the development of Unicode,
which may eventually form a coherent symbol set.

Meanwhile, the geeks have been busy intellectualising information

The ICOM committee for documentation presents a scheme of baffling complexity. ISO 21127:2006 (costs 200 Swiss francs).



On a more influential level, Microsoft has just won ISO standard status for its 6000 page description of the OOXML standard for data exchange, a cynical commercial competitor to the already existing Open Document Format. Here's how they describe a date.

Date representations		
<i>Cell value (B1)</i>	<i>ODF</i>	<i>OOXML</i>
3/5/2007	<pre><table:table-cell table:style-name="ce4" office:value-type="date" office:date-value="2007-03-05"> <text:p> 3/5/2007 </text:p> </table:table-cell></pre>	<pre><c r="B1" s="1"> <v> 39146 </v> </c></pre>

An important aspect is the treatment of dates. OOXML stores the dates 5th March 2007 and the 2nd June 2007 as the numbers 39146 and 39235 respectively. This is the number of days since 31st December 1899. However, there is a “design bug” in the specification that states that the year 1900 needs to be treated as a leap year, which it is not. If a particular setting is altered in the OOXML format, the above numeric representation changes to the number of days since 1st January 1904, avoiding this problem.

ODF represents the dates 5th March 2007 and 2nd June 2007 as “2007-03-05” and “2007-06-02” as in accordance with the existing ISO standard.

Source:

<http://www.iosn.net/open-standards/organizations/ODFA%20UKAG%20Technical%20White%20Paper.pdf>

But durable data can be an embarrassment.
Here is the Nykredit bank in Copenhagen. It got a certificate for green, energy-saving design and issues a nice brochure saying how it uses harbour water to cool the air. That is water that reaches 22°C in a good summer. It won't reveal how much its air conditioning actually costs to run.



So data collection, storage and exchange is in a real mess.

Most data loggers use secret, often binary coded data storage formats. You are at the mercy of the company programmer and can expect at most 5 years durability.

You must always export data to plain ascii files, as comma separated columns of data with comment lines at the top describing the data source (see the wiki for details).

The data is often wrong, because of poor calibration or data reduction in the logger, or bad placement of the sensor.

Indoor climate data without corresponding outdoor data and air exchange rate is only useful for quality control and has no scientific value. Retain it only until the guarantee period expires.

It's even worse than that! There is no way of linking the measured climate to the decay of the art because the ageing is so slow, and our methods of quantifying it so crude.



Do you ever wonder if there are better ways of studying climate?





The CIDOC group makes a study excursion