Bitemporal Envelopes: an Example

There is often a need to recreate a report on historical data that was run some time in the past. If corrections have been made to the data reported on, the data needed is the data as it was at the point in time the report was run.

For example, suppose a CSR pulls up an insurance policy on May 1st, to tell a client whether or not she was covered for an acupuncture treatment she had on the previous April 17th, and she tells the client that she was covered on that date (April 17th).

But on May 5th, the insurance company discovers that the policy data was in error and that, in fact, the client was not covered for acupuncture at any time during that year.

The client's insurance claim is rejected, and the client calls back to ask why, say on May 10th. The CSR pulls up the client's policy, which now says that the client was not covered for acupuncture on April 17th.

The client complains that she had called on May 1st, and was told that she was covered on April 17th.

What the CSR pulled up on her screen, on May 10th, was the corrected historical data. What the client is referring to is the historical data which was current on May 1st.

That past, before-corrections historical data should be contained in the same historical table as its corrections. The CSR should be able to ask for the state of the policy on April 17th, as reported at any point in time -- as reported on May 1st, or as reported on May 10th.

Data which can do this is bitemporal. The first temporality is applied to a table by adding a time period to it. This gives us a history table, or a version table. This puts the policy data in a temporal envelope.

The second temporality is applied by adding a second time period. This puts the history/version table in another temporal envelope. Changes to policies are recorded as new versions of the policy, and made with the first time period. Changes to correct mistakes in data are recorded as new assertions of versions, and are made with the second time period.