This report describes the processes of analysing, designed and implementing a solution to three functions of the Sweet as Express (SAE) Application:

1. Identifying potentially lost packages and relaying this information to transport managers
2. Allowing these packages to be recorded as lost
3. Allowing previously lost packages to be recorded as found

Clearly these are all closely related, dependent on each other but also highly dependent on processes and media outside the scope of a data storing application.

While the original problem description does not explicitly impose a requirement for either of the last two functions, they were deemed to be implicit requirements; if the application can identify and present packages that may become lost, it follows that those that have in fact been lost, not just mistakenly left unrecorded, need to be recorded as such. Furthermore, it is a real possibility that packages may be found at some juncture after having been lost. The solution needs to reflect this.

The later stages of the process had the advantage of an initial high-level collective analysis, resulting in a consistent set of entities that each component function could later interface with in similar ways. While a suitable long-term system for data storage, such as a relational database was not used, it was decided that designing the system with a centralised data interface entity with the appropriate outward facing functionality would be used. If the internal implementation of this class were changed to interact with a relational database the rest of the solution would continue to work without modification.

One major drawback of the presented solution is the lack of levels of distinction between objects in the system. Realistically a Transport Manager for the large, international SAE would only be presented with packages from their region of responsibility not packages from everywhere. Realistically any transaction of data should yield results that fall within a set of data the user is supposed to be able access.

The solution also tracks the progress in a way that makes it difficult to follow the physical transits of a given package. The data recorded focuses on the nature of the event at each occasion an item is scanned during the transit and delivery process rather than providing detailed data about locations. Similar to the issues of region, in any large, international context this would decrease the usefulness of the data provided to the transport manager who needs as much information as possible to ascertain the true state of a physical package.

A second oversight in the process is one of access and access control. The Transport Manager Interface was designed and developed to be similar to the interfaces for other roles in SAE. However, little control was added around these, meaning that there may be issues with different users concurrently accessing data. This is partially excusable as the underlying data model is, essentially, currently a placeholder and better knowledge of the implantation details would be required to control concurrent access and modification of data.

Overall, the process, while for the most part correct and resulting in an acceptable structure has led to some weaknesses in the final structure. Some of this can be attributed to lack of experience of such development and some to a lack of initial familiarity with the basic requirements defined by the initial problem itself. In and of themselves there is little inherently long 3 functions of primary concern here but there are issues in some details of their interaction of the wider system most notably the control of data.