

Executive Summary-Users Point of View

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Interpool Smart Card using XML standards

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When a shipping container is sent from one terminal to another, there is a great deal of tedious paperwork and processes that need to be followed. The paperwork mentioned includes information about what is inside the container, where it came from, where it is going, the weight, the payload etc. This gives the users and the owners of these containers some sort of idea of when to expect the shipment but not a very accurate answer since they cannot predict things like traffic, flat tires, or even accidents that may cause delays. When the container is in transit, no information can be obtained about its status. For example, if hazardous material is being transported from one place to another, there is no way to monitor what is happening inside the container in a timely manner. There is no electronic system in place to track a container from its terminal of origin to its terminal of final destination and report to both of the sides for current condition and local positioning. Some companies have been using GPS systems to track containers, however, they are expensive and easily broken.

What we are intending to do is design a system by which containers can be tracked from origin to destination. Specifically, we are responsible for the smart card and security aspects of the smart card. The smart card will have a microprocessor as well as memory that will store the data that would have been done through paperwork. The smart card should be able to communicate wirelessly with the smart card readers located at different gates or terminals in which the cargo will pass through. This will allow for a transfer of data which authorized officials will have access to hence have more control of these containers.

Our prototype will provide the customer with added security, it will control the access that a given person has to the data at a given time and it will avoid the need for

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paperwork. Security has proven to be a major concern in America today, it is vital to protect information that could be transferred when shipping containers. These containers sometime contain high sensitive material that needs to be protected and secured. The smart card technology is able to do just that. One of the biggest functionalities of this technology is its high grade of security with the usage of passwords and protection of data allowing only authorized officials to have access to it. This technology will also allow for controlled access of the data, it could give full access to a certain users at a given time while given limited access to others depending on the need of the customer. Another important function of our product is to eliminate or rather diminish the need for paperwork. Many mistakes are made through the ancient use of paperwork, this also allows for a greater number of mistakes and errors to occur. This will allow for more control of the data, making it easier to update since it will be electronically transmitted, allowing also for faster data transfer.

Our smart card will replace all the ancient paperwork, thus allowing for a higher security level. Having all this information programmed and stored will make it easier for authorities to identify the cargo and even the driver given that his/her information is also programmed in there as well. The smart card will replace all existing technology allowing for higher security and will make the information regarding to the container more accessible, thus increasing the revenues of companies that are in the container business. In addition, they will be able to monitor and track the containers, which means that the shipping and handling companies can offer more security for the products they carry or ship in affordable prices, as a result the customers can lay assured that their equipment and/or products are safe, secure and monitored constantly.

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This product will provide the customer all the features discussed above at a very low cost, it will allow for bi-directional transmission of data between the container and the terminal or gate while tracking and tracing these containers allowing for better planning from the customer's perspective. By knowing an accurate location and condition of the containers, customers and companies involved in the shipping business will be able to plan the usage of their container in a more effective way. Time is money! If the customers know when to expect the shipment they could plan on another shipment immediately after which will allow for greater usage of the containers thus making a larger profit.

This product is aimed mainly for companies and customers in the shipping and loaning of container business. The shipping industry will benefit greatly from an economical product like this one to track and trace their containers while having the data regarding these containers secured and protected. Currently the profit margin for loaning out shipping containers is very small. If the company could develop "smart" containers with additional features that would reduce the need for paperwork, then the profit margins for these containers could improve. An additional challenge is that these "smart" containers must be relatively inexpensive; otherwise there will be no way to recoup the initial investment, which is what our product intends to do.

Other products on the market include GPS units and while this allows for almost instantaneous monitoring of the containers, it is very expensive. Our design, while not necessarily superior technologically, will be more cost-efficient than the current products on the market. Our monitoring will occur on a more discrete basis, being that the status of the container will be updated whenever it passes by a gate or other monitoring device.

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The gate may be installed at gas stations or other such places. We have determined that the added cost of having the container monitored on an almost instantaneous basis is not money well spent. There is no real reason why the location of a container must be known to within a few feet, when the approximate location of a container (i.e. this container is between two towns on the predetermined highway route and it is on schedule) and the fact that the delivery is on schedule can be verified, which can be done with the system that we are planning on building. In the future, the cost of GPS units may come down to a level where it may be profitable to put GPS units on containers. But for right now, it is our understanding that it is a luxury to have near-instantaneous access to a shipping container.

In Conclusion, we are proposing an innovative product that will add security as well as control the transport of cargo containers throughout the world. We will accomplish this by constructing a smart card, which will be programmed using C and Basic, and will implement the use of XML. The smart card will have information relating to the cargo on the container and any relevant information linked to the container.

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