

SYSTEMS THINKING

SEMESTER PROJECT:

TITLE: Universal Travelers Identification / Airport Security System and Database.

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PURPOSE: Easier identification of travelers worldwide and enhanced security measures for the major airports of the world.

INTRODUCTION:

Airways have become the principal mode of travel in the world nowadays owing to its time saving characteristic. There are principal air traffic hubs in the world; where the world's busiest airports are situated. For example, the London Heathrow airport handles around 67 million passengers annually, the JFK airport in New York handles about 49 million passengers annually etc. when one look at such large volumes of passenger moving through the gates of these massive airports; one does tend to think about the security measures and the necessary legal identification procedure of the passengers disembarking into a country or leaving a country. No doubt these airports have sophisticated surveillance and security systems in place and also the people identification process is flawless, one tends to be skeptical about how long these measures can hold water.

Sometimes these measures can be cumbersome and obtrusive. And time consuming in the least. So the need of the hour is such a security system that is efficient, unobtrusive and more importantly, less time consuming.

OUR PROPOSAL:

In our project we propose such a system. This universal system will be operational in some of the world's busiest airports such as Heathrow, Charles De Gaulle, Shanghai, Singapore airports etc.

The main backbone of this system will be a database which holds the personal records of all the persons going in and out of the country. This database also has a separate section of all the persons listed as suspicious or in the wanted list for acts of terrorism etc. the information to be fed into the system will be done through a many input channels.

1. retinal eye scan of the person at the airline kiosk
2. right and left thumb impression of the person at the kiosk
3. voice modulation recognition.

As seen from above; this allows the security officials to reduce their dependency on paper documents like passport, other legal documents. Once a person's identity has been identified, the person's visa status will be known directly from the database which is connected to the embassy database of that country.

The baggage brought by the passengers can be screened again at the kiosk by an in-built 3D X-ray scanner which scans the luggage when held in hand by the passenger for contraband articles like guns, knives etc. this eliminates the requirement for separate baggage scans for individual pieces of luggage. Also there will be special explosive sensors even for plastic explosives which may escape normal screening procedures.

Apart from the personal screening and luggage screening;
The security managed by this database is managed by an artificial intelligence system. This AI system decides on suspicious activities and immediately zeroes in on the target using 3D intra airport positioning system and deploys the security.

IMPLEMENTATION:

We plan to implement this system by using a high processing capacity server which is centralized with respect to all the airports in the world. It would be protected by high level digital and physical security. The digital encryption security provides safety from hackers and prying eyes; while the physical security protects from potential sabotage elements. Also this server is to be housed in a location well protected from the natural elements.

The scanners and detectors in the airport are to be kept in various vantage points to allow most unobtrusive passageway to passengers.

PREDECESSOR SYSTEMS:

The predecessor systems for airport security as mentioned before are CCTVs, normal X ray machines, security guards deployed in random areas, manual checking of all documents, tap-down check of passengers etc etc.