The reason of this work is the will expressed by the Innovative Research department to study the juridical feasibility of a technical project having implications on individuals’ rights. This original approach is based on the fact that the European Union constitutes an integrated area with uniform rules applicable to and by all members. In addition several projects concerning technologies impacting civil rights remained at the state of project because their deployment was jeopardized by this affront.

The present project must be considered as an innovative and constructive step taking into account the two sides of a same coins as we consider that technology shall be designed to serve human.

Civil aviation is characterised by constraints of different nature impacting airlines, airport operators and other actors intervening on the platform. We briefly isolated and illustrated these constraints by organizing them in two categories: regulatory constraints and operating ones. 
The regulatory constraints refer to security and passengers economical rights. Security\(^1\) imposes certain obligations such as the respect of the security area integrity, reliability of the boarding pass, separation between screened passengers and non screened ones and reconciliation, before take off, between the passenger and his property.
In addition, passengers have some economical rights that are concerning fulfilment of their contract of carriage.

\(^1\) This study is based on our juridical overview page 35. Our main references are the ICAO Annex 17 to the Convention on International Civil Aviation and the European Regulation 2320/2002.

Indeed, a delayed baggage delivery or even loss of the latter will entitle its owner to claim for damages\(^2\). Even if these regulatory constraints impact the operating approach, an important distinction between these constraints should be done.
Operating constraints refer to the core principle of the air transport business, responding to a supply chain logic. Therefore, hub type airports or “super-sized” structures add complexity and jeopardize this logic. Many losses of luggage or late passengers could be clarified by these reasons.
There are some actual and future capacity constraints that are observable under the shape of bottlenecks. Enhanced security measures are contributing to such asphyxiation of passengers and luggage processing schemes.

\(^2\) This study is based on our juridical overview page 11. Our main references are the Warsaw and the Montreal Convention and European Regulations.
All constraints exposed there have a cost and will have a greater impact in the forthcoming years. Another approach could be necessary.

- Airlines and airports operator experience constraints of different nature. Radio Frequency identification (RFid) with its characteristics could contribute to solve most of them.

![Figure: Structure of an RFID System](image)

An RFid system is composed of a reader, connected to a host system, and a transponder. The reader and the transponder communicate on precise radio waves bands generating a data energy clock. The average distance of this invisible link goes from few centimetres to several metres. The reader can be located in a specific place such as the entrance of a security area or carried by personnel in order to randomly localize tagged items. It activates, or initiates, communication with the tag by broadcasting a radio signal.

The transponder, or tag, is composed of a chip, made of silicon or polymer, and an antenna. There is a twofold option concerning the type of tag. We can have an “active” tag composed of a chip and a battery or a “passive” tag not requiring any internal power source. This last alternative allows a passive broadcast and identification on request only. Beside, as there is no internal power supply, its lifetime is long-lasting and the simplicity of its components allows a cheap price, a quite basic and reliable building. The tag only responds to the reader’s radio frequency emission and derives its power from the energy waves transmitted. A passive type tag is not a smart tag; its functions are limited to identification and localisation.

RFid tag carries more data than barcode or magnetic stripe and can be attached to, or embedded in, an item allowing its permanent and remote tracking owing to a unique serial number stored in the chip. This serial number refers to a database to which the system is linked (the host system). Information contained in the database includes item identifier, description, movement and localisation. The type of information housed will vary by application.

- The core interest of RFid is the given ability to localise and identify an object owing to the possible remote capture of information

The aim of this project consists in studying the juridical feasibility of embedding such technology in boarding pass and baggage tags. This disposal will help to locate passengers from the entrance of the security area until the boarding gate. Passenger will receive, while checking in, an RFid boarding pass and his progression thorough security screenings and within the security area. This tracking ability responds to security justifications operating ones by allowing a localization of late passengers. The tag will cease to function at the boarding gate.

Concerning luggage, the logic applicable is the same. The baggage tag will allow tracking of the object a real time localizing assessing security, with for example a more efficient reconciliation bag/pax process, and economic constraints by granting more flexibility in the management of aircraft hold content. This tag will cease functioning shortly after claiming done by its owner.
The combining of these practice and the characteristics of RFID will allow:

- A permanent and remote localising of passengers and baggage.
- An appropriate tool granting flexibility for airlines and airports.
- A real guarantee for security purposes.

But, these potential uses and applications to natural persons, and to their property, arouse several juridical questions due to the possibilities offered by RFID technology.

First, this technology allows the profiling of the data subject, or passenger. The identification number of the tag is linked with the passenger’s identity. This connection, in the host system, is made during check-in procedures. This principle is applicable to the boarding pass and to the bag tag. We are therefore dealing with personal data.

The second consequence of using RFID is surveillance. As above-mentioned the main interest of this technology is to locate its “targets”, the passenger and his luggage, in specific spaces. Readers placed in strategic points of the security area allow passenger localization. The same logic is applicable to baggage. This information will be placed in the host system allowing a real-time tracking.

The third implication of RFID is action. Reading the information contained on the tag and localizing the bearer, or object, gives the possibility of actions ranging from the granting of appropriate information or guidance to the localizing and unloading a specific piece of luggage.

The combining of these three characteristics poses some serious questioning with regard to passengers’ fundamental rights. The study of juridical consequences due to the wide spreading of RFID technology is a recent but urgent preoccupation.

In Europe, the questionings caused by this equipment are considered through the scope of European Directive 95/46/CE concerning the protection of personal data.

Further analyse will be based on this European reference text and on the Working document of the Article 29 Data Protection Working Party dealing with “(...) data protection issues related to RFID technologies”; elaborated in January 19th, 2005.

The data broadcasted by RFID tags could relate whether to an individual as such or to an individual which is identified or identifiable. The way we consider the system, makes the passenger identified only if referring to the Passenger Name Record (PNR) data base. These data subjects are therefore identifiable owing to the identification number of the boarding pass or bag tag.

Our vision of the project’s practical, operational and juridical consequences leads us to use passive pre-printed tag containing a unique identification number and, referring to personal data located in the host system.

Information is only relevant to the one having access to the host system.

Indeed it is only within this database that the connection between the tag id and the passenger is done.

---

3 For further details see our juridical overview page 50. We mainly refer to Privacy.
4 For further details see our juridical overview page 52.
Therefore, a strict separation between “unprotected but mere information” embedded in the tag and “secured and relevant one” located in the host system can be considered as a real privacy guarantee.

Our framework is based on the hypothesis that airlines are the processor. They already constitute PNR files during booking procedures. Implementation of Rfid is only leading to another application of these commercial data.

It is important to underline that there are no specific information gathering for the system operating and that these foreseen Rfid use shall be determined and explained to the passenger prior any information collecting. Other actors that could benefit from the Rfid tags shall be clearly identified.

Airports or handling assistants would have an access to the identification number and other information contained in the host system such as the flight number.

The data subject of the host system is known as the airline passenger. Airlines shall inform passengers of the possible use and disclosure of information and of course give the identity of the beneficiary of these pieces of information.

Finally, the collecting and broadcasting are done and justified for security and operational purposes. The main aim of this project is to fulfil security preoccupations, and to locate late passengers and or bags within the security area and baggage handling process.

➢ The implementation of Rfid technologies should be possible if the basic principles lay down in the directive 95/46/CE and in the G29 advice are followed.

The first core principle to study is the use limitation principle. According to this obligation, the processor shall indicate during the collect of information the precise use it wants to make of these data. The processor is limited by this collecting motivation.

Further processing for different finalities is not possible. Rfid system will not need specific information collecting but will be linked to airlines’ files such as PNR. Therefore, the appropriate behaviour would lead to notify, to the passengers, the existence of a link between databases hosting personal information and these broadcasting devices.

One more point to precise is the status and use of the recording of passengers’ movements within the security area. Indeed there shall also be information granted to passengers concerning the constitution of files consigning these “feed back” information. These “feed backs” shall not be used for commercial or marketing reasons. The Rfid system is justified for security and operating purposes and it shall not be subjected to any other use.

This use limitation principle shall be coupled with a data minimization principle. Indeed the Directive incites to exploit only the most useful and relevant information in order to preserve passengers’ rights. Data must be adequate, relevant and not excessive in relation to the purpose for which they are processed.

The second principle concerns conservation. Data shall not be kept longer than necessary.
The use of pre-printed tags with embedded identification numbers will be preferable to semantic information. These numbers are reusable according to one week cycles. This is justified by the fact that the RFID chip is disabled and useless as soon as the passenger leaves the airport or claims his luggage.

There is a specific requirement referring to a legal ground for processing. Our attention shall be focused on the application of the contract, which is the real motivation of PNR data collecting. The RFID boarding pass is an application of operating principles granting more efficiency and facilitating the application of the contract of carriage.

A final point to emphasize is the providing of information to the data subject. This principle takes different forms such as the identity of the processor. But the purposes of processing are also subjected to this information principle. It implies to notify the presence of RFID devices in the boarding pass and in the baggage tag. The fact that these devices might broadcast information without any action or control of the bearer must also be explained. The receivers shall be clearly identified and indicated in the security area in order to illustrate the area subjected to broadcastings. This obligation of information ends with the explanation of the different manners of disabling the chips. The proposed project integrates for example, a chip that is disabled during the boarding process by separating the boarding pass in two parts.

Some principles linked to the characteristics of RFID shall be underlined. The G 29 working document points out that the directive 95/46/CE requires, as legal grounds for processing, a disable function. As the tag is embedded in the boarding pass, this architecture allows an easy disabling of the tag by separating the chip of the antenna while splitting in two parts the boarding pass. This natural proceeding guarantees a use limited to the security area of the airport and grant an “automatic” disable function. This disabling will require passengers’ attention concerning baggage tag. They will be responsible for “killing” the tag.

Reference:
- European Regulation 2320/2002, 16 December 2002, establishing common rules in the field of civil aviation security
- European Regulation 261/2004, 4 February 2005, establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights,
- Montreal Convention for the unification of certain rules relating to international carriage by air, 28 May 1999.
- Directive 95/46/CE, 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.
- Security and Passenger Rights, EEC Note, (to be published), 2005, Aurélien SAUTY, EUROCONTROL