

Foreword

The first RFID systems using a silicon microchip were developed well over ten years ago. Almost unnoticed by the public, early applications in animal identification or car immobilization have been used successfully for more than a decade now. Even the first large contactless ticketing applications, started around 1996 in Asia, have not earned a lot of attention outside the technical press.

Now, in the mid-2000s, the picture has completely changed. The announcement of new and emerging RFID applications, such as the so-called “electronic barcode” to be used on food and non-food products, for example, or the contactless passport and many other applications, never even thought of ten years ago, are widely discussed in the press. Today, the RFID market belongs to one of the fastest growing sectors in the radio technology and IT areas. Also, the increasing number of companies actively involved in the development and sale of RFID systems indicates that this is a technology and a market that should be taken seriously.

Furthermore, in recent years, contactless identification has developed into an independent interdisciplinary field that no longer fits into any of the conventional fields. It brings together elements from extremely varied subjects, such as RF technology, semiconductor technology, telecommunications, manufacturing technology, data protection and cryptography and many other related areas.

In the early years, the RFID implementer and system integrator often suffered from a lack of RFID standards. Almost all products have so far been proprietary to the different companies. Interoperability between products from different sources is not the state of the art. In the meantime, numerous standards have been released and some more are still under development. Current standards cover all of the most important application areas of RFID, such as ticketing, banking, smart labels, electronic passports, animal ID, freight containers and, last but not least, the electronic product code (EPC). Nevertheless, it has not become easier at all. Today’s challenge is, in fact, to keep an overview of all of the new emerging standards and new technologies and to be able to select those that best fit one’s own needs. Furthermore, there still exists a lack of literature on the technical basis and the standardization framework of RFID. In this spirit, I really appreciate the present work of Dominique, who is a well-known and respectable colleague in RFID standardization work, which I am sure will become an important source of technical basics for contactless smart cards and smart labels.

Klaus Finkenzeller

