Although RFID is surely not new, it is attracting more attention in recent years. One reason for that is the take off in the market. RFIDs are really becoming more and more popular, which of course is due to the fact that tag technology has advanced now so far, that price, size and performance have reached levels that made market penetration possible. But, technology for making the tags itself, is not all; companies want solutions integrated in their processes, and that too takes time and requires new technologies, but then in the sense of assembling and manufacturing technologies. And, obviously, also standards were (and will be) very crucial for mass adoption.

Aside these evolutionary trends, there is another reason for the increased interest: new technologies, that can open completely new markets and applications. Most importantly, organic electronics, that provides an alternative to the silicon-based technologies, and printing technologies, that (often, but not necessarily, in combination with organic electronics) promise very cheap mass production for flexible products.

This section on RFID starts with a contribution of Henri Barthel, from the global office of the standardization institute GS1 in Brussels. It puts the RFID tags into a context, seen from different angles: historically, markets, applications, standardization, privacy issues, and regulations.

The next three papers address tags made in silicon IC technology. The first one, of Mitsuo Usami from Hitachi, describes the design of the world’s smallest, and thus also very low cost, silicon-based tag IC. Aside the IC-design aspects it treats novel fabrication and assembling technologies that enable low-cost fabrication. In a next chapter, Raymond Barnett of Texas Instruments addresses analysis and design aspects for the various blocks of complex tags that require full functionality. The third chapter, of Albert Missoni from Graz University and Infineon, describes the design of a front end for a multi-mode tag that can operate at both the UHF and HF RFID frequency band.

Finally we end up with two papers describing first transponder blocks made in emerging new technologies. The first one, from Jürgen Krumm, PolyIC, focuses
on printed electronics. The second one, from Kris Myny of IMEC/Holst Centre, focuses on organic electronics. Both describe the state of the art in these fields and the expectations for the future.

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