



# RFID Standards and Radio Regulations

Alexander Gauby  
RF-iT Solutions

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## Definition

- In the context of technologies and industries, standardisation means a process of establishing a technical standard among competing entities within a market, bringing benefits without hurting competition.
- A standard is a rule or method that describes framework requirements, like the use of specific system components and protocols.





## **A mismatch of perception and reality**

- Public perception:
  - there are not enough RFID standards existing to realise applications
- Reality is different:
  - CE RFID has identified more than 200 RFID standards
- We want to:
  - show that standards are already well established
  - point out that still some inconsistencies exist
  - give recommendations for further standardisation activities



## Categorisation of RFID standards

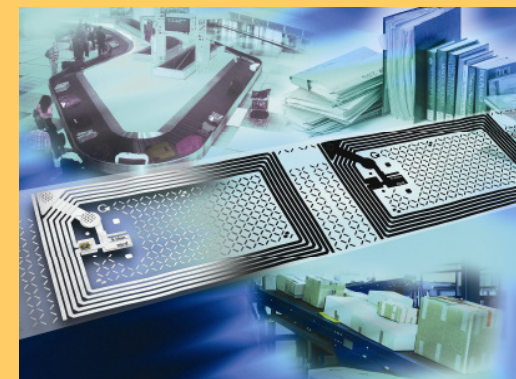
- Types of standards
  - International standards
  - Publicly available specifications
  - Technical specifications
  - Technical reports
  - International workshop agreements





## Analysis of different RFID standards

- Radio regulations and communication standards
- Data and network standards
- Application standards
  - Logistical tracking & tracing
  - Production monitoring & maintenance
  - Product safety, quality & information



Source: RF-IT Solutions



## Standardisation processes

- Strengths:
  - Major SDOs are committed to work out RFID standards
  - European technology providers and end user are involved
- Weaknesses:
  - Lack of co-operation between standardisation organisations
  - Duality between European and national standard development organisations
  - European stakeholders are not sufficiently represented in some international standardisation activities



## Radio Regulations and Communication Standards

- Strengths:
  - Globally established frequency bands (LF, HF)
  - International accepted air interface standards like ISO 18000-6C / EPC UHF Generation 2 exist
- Weaknesses:
  - Lack of globally harmonised UHF frequency spectrum
  - Very slow speed of creating RFID regulations and provision of radio spectrum



## Data & Network Standards

- Strengths:
  - Data standards are well defined and widely used
  - Number of network standards has increased significantly during recent months
- Weaknesses:
  - Standards besides data standards are available, but not implemented in products yet
  - Available standards are rarely used until now
  - Limited expert involvement in privacy and security issues



## Application standards

- Strengths:
  - International application-specific standards promote RFID technology in those fields where generic standards are not sufficient
- Weaknesses:
  - Many existing application standards are only available as national standards
  - Many existing application standards have a narrow focus



## Conclusions

- A big number of standards has already been established
- Only close co-operation between SDOs leads to fewer but more broadly accepted standards
- Acceptance is achieved by involvement of users in standardisation processes
- Most RFID applications need international standards
- Harmonisation process within Europe should be accelerated



## **Recommendations for future standardisation activities**

- Standardisation organisations should focus on generic and easily applicable standards
- Close co-operation between existing international standardisation organisations should be fostered
- An appropriate radio spectrum framework has to be ensured, specifically in Europe
- The demand for standardisation of data protection and data security in different application fields has to be investigated by standardisation organisations



**Thank you.**



## For further information:

Alexander Gauby  
RF-iT Solutions GmbH  
Hans-Resel-Gasse 17a  
A-8020 Graz  
Austria

Phone: +43 316 711111 300  
Fax: +43 316 711111 900  
E-mail: [alexander.gauby@rf-it-solutions.com](mailto:alexander.gauby@rf-it-solutions.com)  
Internet: [www.rf-it-solutions.com](http://www.rf-it-solutions.com)

Eldor Walk  
FEIG ELECTRONIC GmbH  
Lange Straße 4  
D-35781 Weilburg  
Germany

Phone: +49 6471 3109 437  
Fax: +49 6471 3109 99  
E-mail: [eldor.walk@feig.de](mailto:eldor.walk@feig.de)  
Internet: [www.feig.de](http://www.feig.de)