

RFID Solution Excellence Center

Press Briefing, March 30, 2004 – Graz, Austria

Opening: System Lab

Stefan Rohringer

Director, Development Center Graz

Bodo Ischebeck

Senior Director & General Manager,
Emerging Business, Ident Solutions



Never stop thinking.

Agenda



Infineon at a Glance



Development Center Graz



RFID Solution Excellence Center: System Lab

Infineon on the Way to the Top



Source: Gartner/Dataquest, before 2000; iSuppli 2000-Sept. 2003

Infineon at a Glance

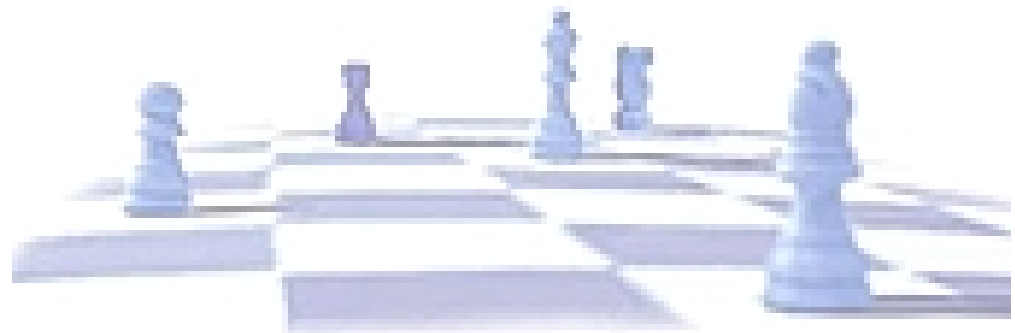
- Infineon - a top 10 semiconductor company
- Revenues of EUR 6.15 billion in fiscal year 2003; revenues growth of 26% year-on-year ⇒ outperforming market growth
- Improved market position in our target markets and gaining market share in all business groups
- Approx. 32,900 employees (incl. 6,100 R&D staff) as of December 31, 2003
- Strong technology portfolio with more than 37,000 patents and applications; 46 major R&D locations world-wide
- Most advanced fab cluster and world leader in 300mm production
- Focus on communications, automotive and memory products
- Successfully pioneering the solution business in target markets, e.g. secure mobile applications, telematics, etc.

Strategic Objectives

Agenda 5-to-1

Within the framework of the **Agenda 5-to-1**, Infineon intends to:

- 5 focus within the **5 YEARS** from 2002 to 2007
- 4 to become a **TOP 4** global semiconductor player
- 3 by achieving a minimum **TOP 3** position in each segment served
- 2 with a **TOP 2** financial performance in all businesses against competition
- 1 and being the **NUMBER 1** semiconductor company pioneering the solution business



Infineon: Market-oriented Business Structure

Business Groups

Applications

Wireline Communication



Broadband and Carrier Access, high speed line cards for metro and long-haul optical networks

Secure Mobile Solutions



Secure mobile applications and systems: communication, payment, identification, computing, entertainment, wide area wireless and local area wireless networks, personal area wireless networks, GPS

Automotive & Industrial



Car Electronics (powertrain, body, convenience, safety, vehicle dynamics, infotainment), industrial drives, automation and control systems, power supplies

Memory Products



PC and notebooks, PC-upgrades, workstations, infrastructure (servers and network), PDA's, SMART phones, computer peripherals

Customers

Agenda



Infineon at a Glance



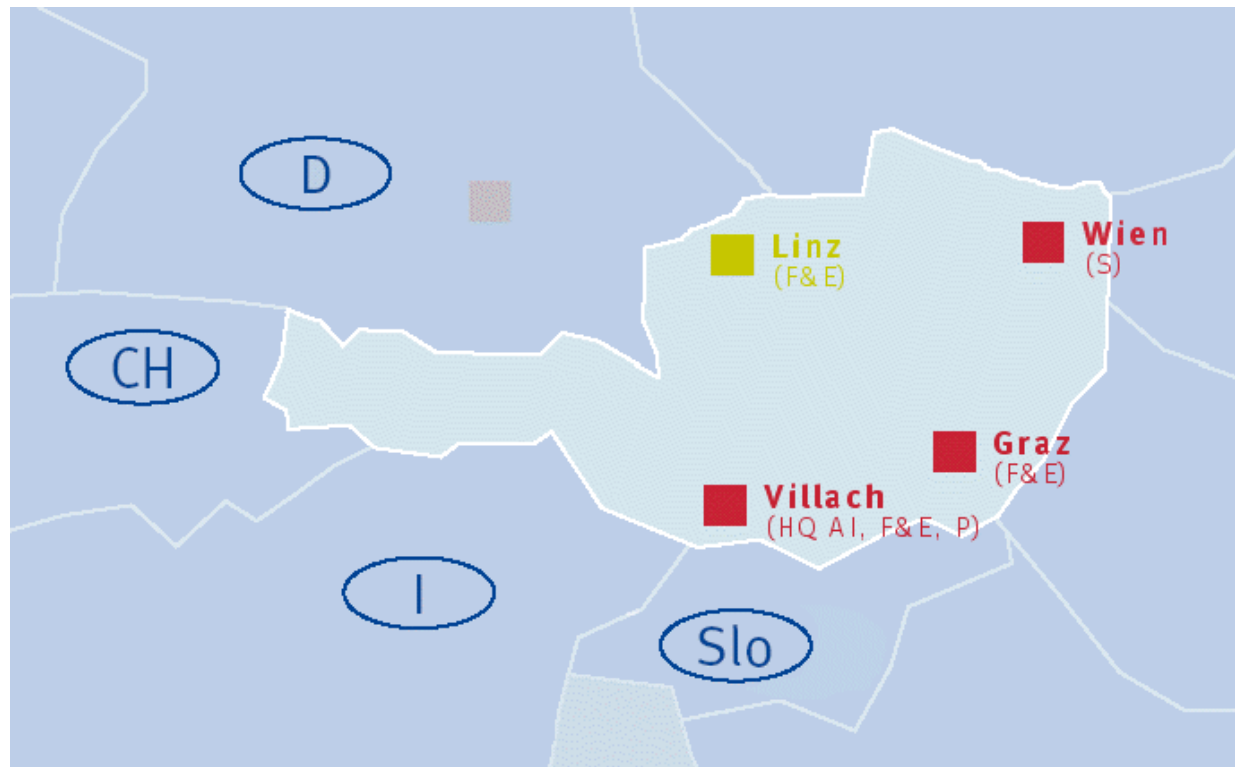
Development Center Graz



RFID Solution Excellence Center: System Lab

Infineon Technologies Austria AG

Locations



Foundation:	1970
Total surface area:	158,000 m ²
Products:	Automotive and Industrial, Secure Mobile Solutions, Wireline Communications
Workforce:	2,600 (including 600 employed in R&D)
Sales/year:	EUR 533 million (including DICE and Comneon)
Production volumes:	10.4 billion/year

Stand: 30.09.2003

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Innovative Products out of Austria

COM (Wireline Communications)

Telephony via Internet, ADSL and VDSL
(sfastest form of Internet communication)

SMS (Secure Mobile Solutions)

Electronic ID cards, SIM cards, health care cards, encrypted computer communication, new UMTS and GPRS mobile radio generations, base stations

**Ident Solutions
(Radio Frequency
Identification)**
Libraries, Logistics,
Production

AI (Automotive and Industrial)

Airbags, ABS, power switches,
engine management, sensors,
Remote keyless entry

Customer

Development Center Graz

Foundation: 1998 as R&D site

Products: Automotive and Industrial, Secure Mobile Solutions, RFID solutions

Workforce: about 140

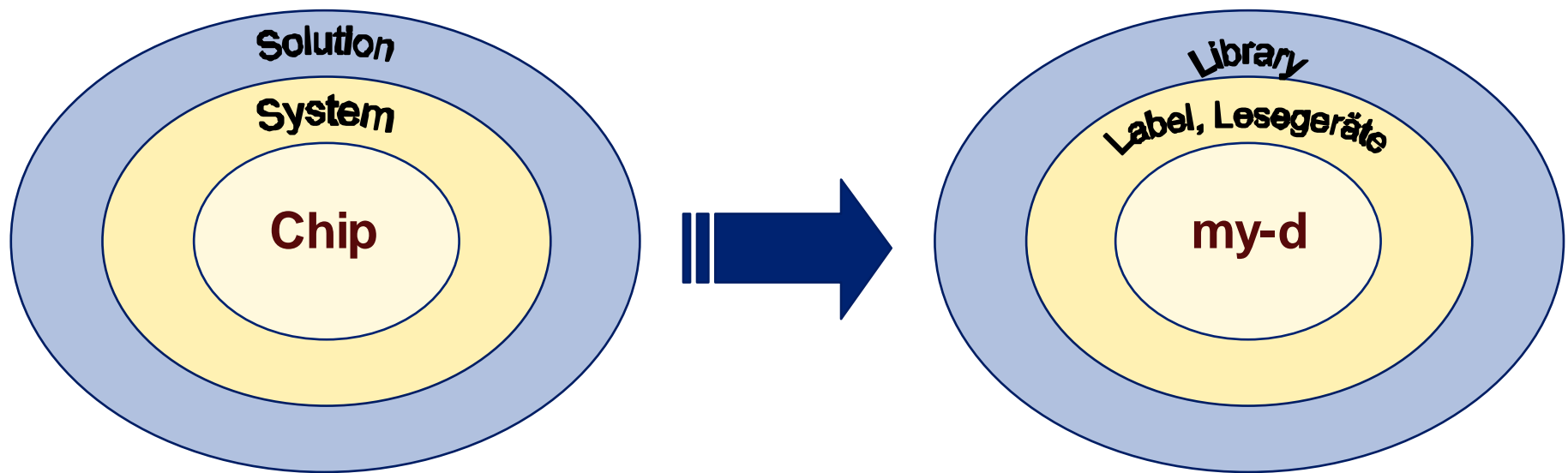
F&E Budget FY03/04: about EUR 30 million

Stand: 03.2004



Infineon Technologies in Graz

- Worldwide competence center for contactless solutions
- Development of the applications of the future (E-Ticketing, E-Passport, radio frequency systems in cars, powertrain, ...)
- Chip → System → Solution



Graz provides solutions

Products / Developments out of Graz

- The data capacity of RFID chips (my-d) developed at Graz are about 40 times larger than other currently available
- Contactless security controller in cooperation with Sony
 - SESAMES Award 2002 for the best technological innovation within the smart card arena
- Every 2. remote keyless entry car key in the world incorporates chips developed in Graz
- Tire pressure monitoring systems of every 10th car worldwide use chips developed in Graz
- On average, one in six inhabitants of the Earth use an Infineon chip on a chip card – every second of these chips was developed in Graz

Competence Center for Contactless Solutions

- Market success with products
- Outstanding security expertise – „Best-in-Class“
- Longtime experience with contactless interfaces
- Technical universities and technical colleges on site
- International network inside and outside of Infineon

Agenda



Infineon at a Glance



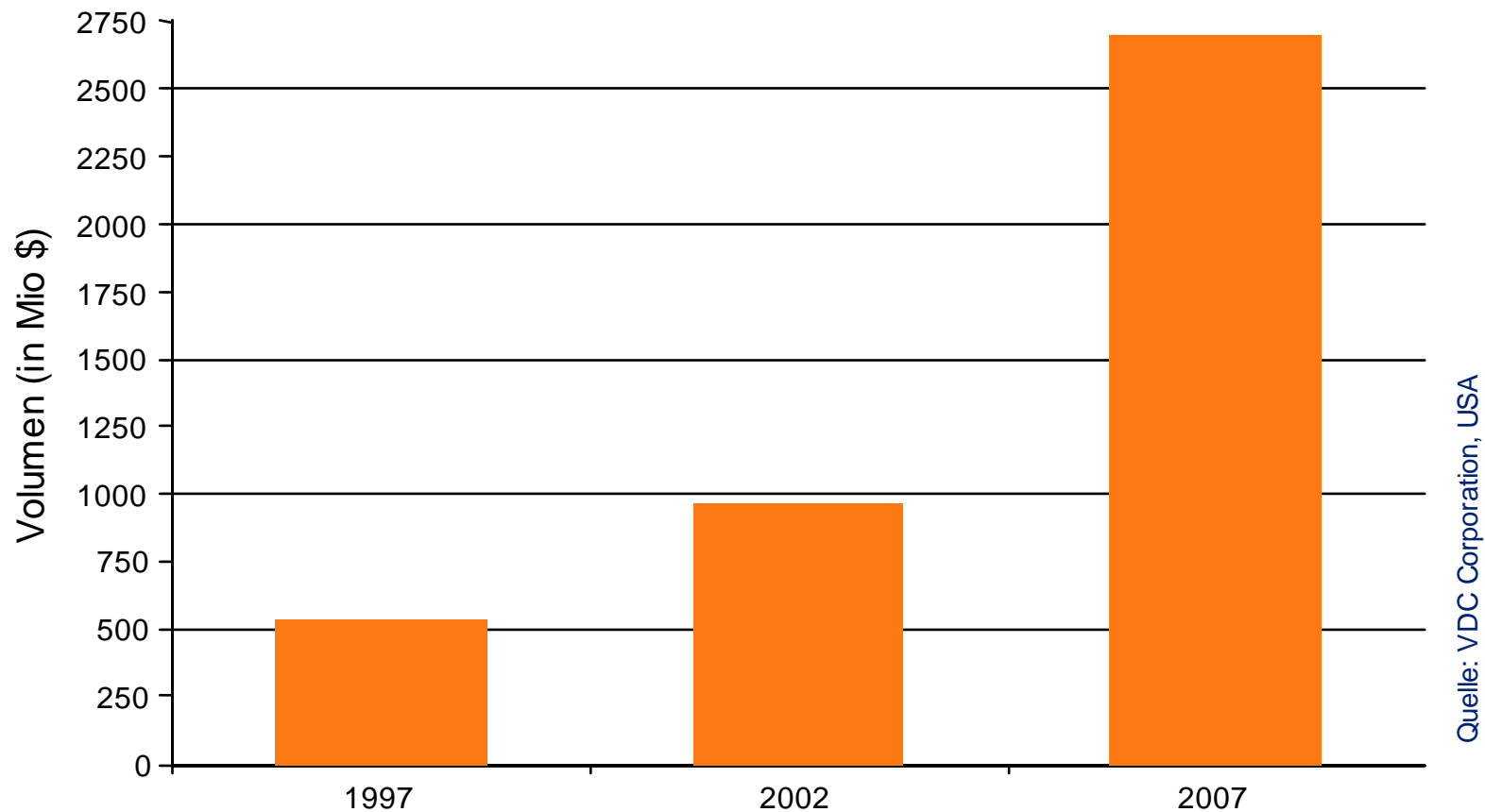
Development Center Graz



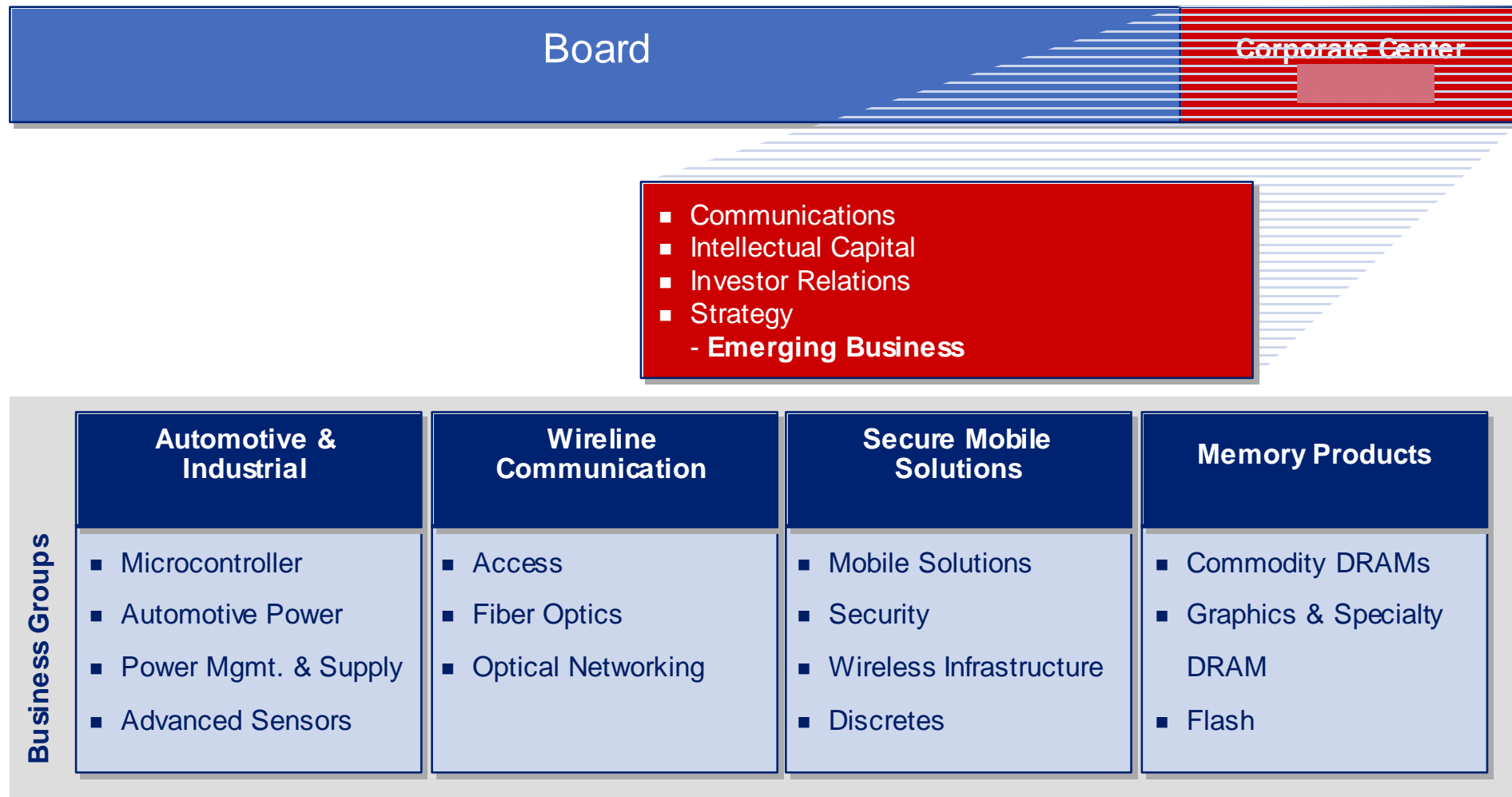
RFID Solution Excellence Center: System Lab

Market for complete RFID Solutions: Tags, Readers, Infrastructure, Software and Services

- Growth rate: more than 20 percent p.a. from 2002 to 2007
- In 2007 the worldwide RFID market amounts up approx. EUR 2.5 billion



Market-oriented Business Structure with four Business Groups and the Corporate Center, with Emerging Business



Customers' Logistics Needs

- Supply chain efficiency: Increased throughput at minimum costs calling for accurate track & tracing (100% automated identification)
- Supply chain transparency: Reduced losses, transfer of perils
- Sound decision bases by visibility of demands, supplies and buying behavior
- Integration into existing infrastructure (standard IT, legacy)
- Security measures for SCM and privacy issues
- Decentralized data handling on item level: data on tag (dot) with read / write capability
- Flexibility for new business models and tools
- Anticipation of future technology solutions where items are becoming increasingly smart (e. g. sensors to monitor cool chains)

Benefits of RFID Technologies in Logistics Processes

- Effective quality assurance already during production process for individual goods
- Significant cost reductions due to redundancy of human intervention in material flow processes
- Automated just-in-time delivery of goods to production lines, storage, subsidiaries or customers
- Quick and easy locating, inventory and check of date-of-expiry of goods in interim storage
- Cost-effective traceability of goods after delivery to customers
- Consumer benefits from all-time availability of up-to-date maintenance data of consumer durables and electronic certificate of guarantee

Advantages of RFID Technology compared to Barcode

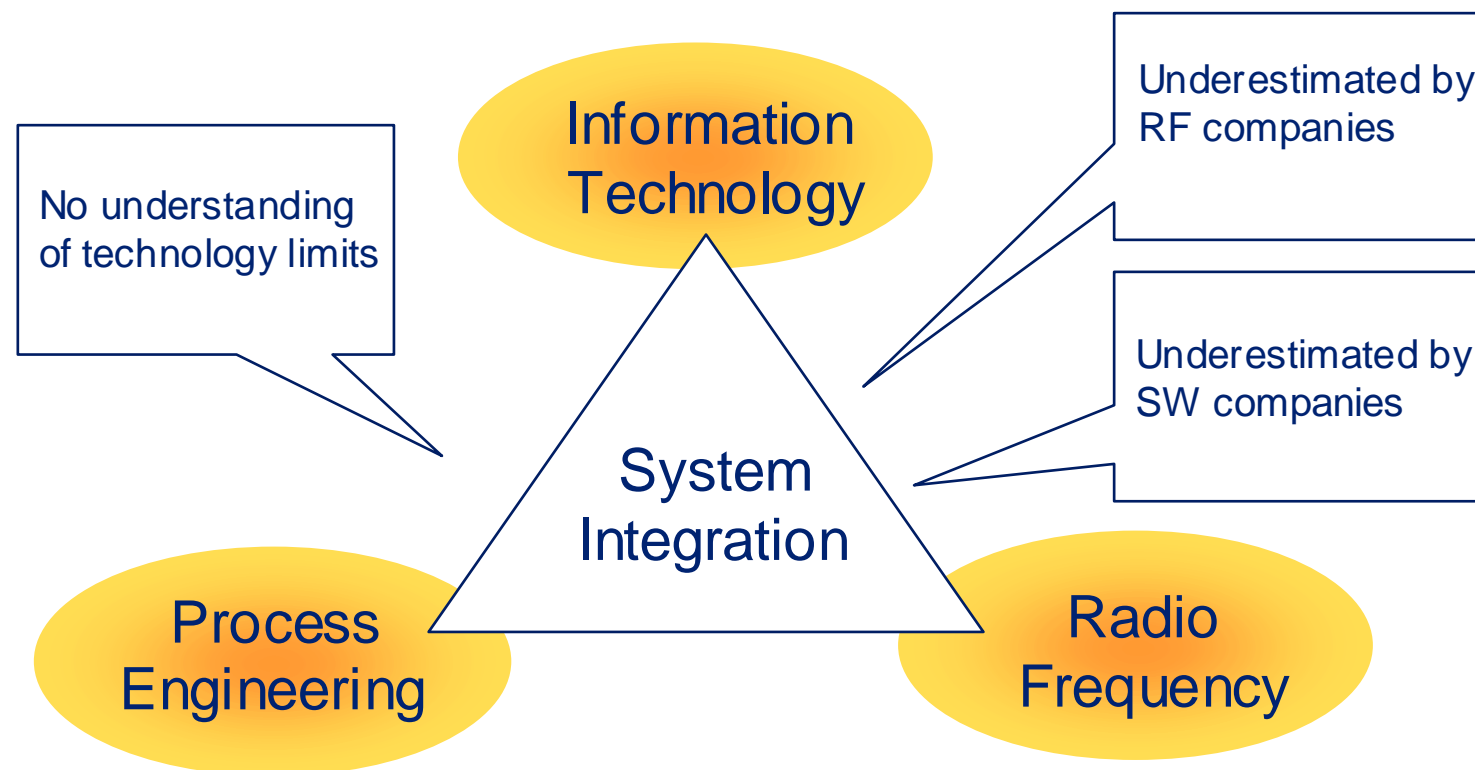
- No line-of-sight required to read or change tag data
- Simultaneous multiple item identification (fast bulk read) vs. barcodes' single read only
- Significant time saving by a factor of 10 within distribution value chain
- High storage capacity of up to 10,000 characters
- Write / update capability
- Secure information due to encryption
- Resistance to harsh / dirty environments
- One Tag from production to shelf



Infineon's 3 Core Competences for Contactless Interfaces, Process Management and IT for successful System Integration

Challenges of RFID system integration

- Integrate into heterogeneous IT landscape
- Design processes that work
- Offer excellent know-how of RFID technologies

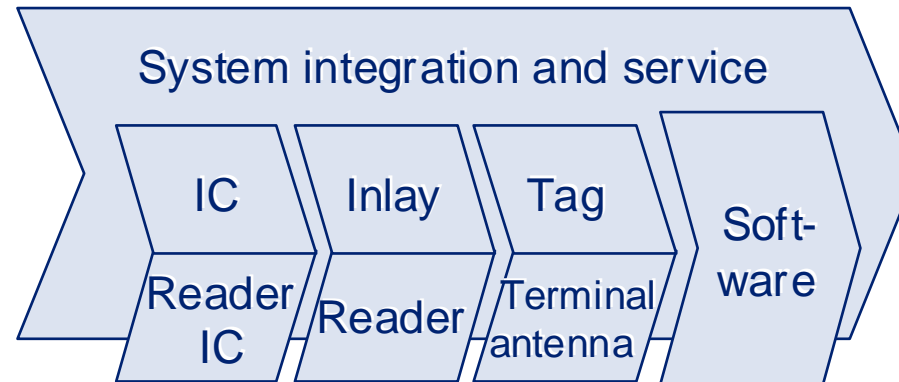


Challenges of RFID System Integration

Examples of critical parameters

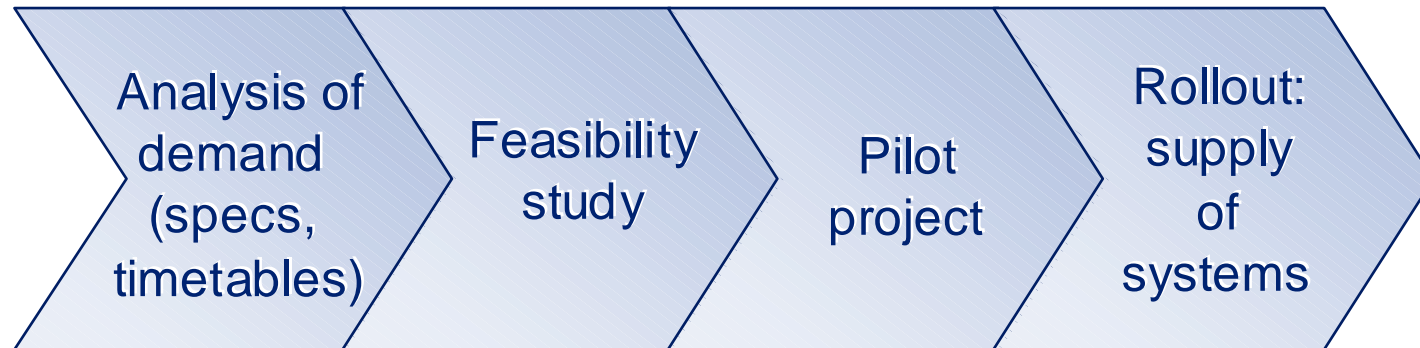
- Claimed minimum operating distance
- Minimum identification speed (tags/sec)
- Size and handling of items
- Material of items (surface, mounting of labels, special tags, tag distance to metal, ...)
- Bulk reading requirements (minimum distance of tags, tag position, item surface, ...)
- Surroundings (metal, ...)
- Noise (engines, neighboring readers, ...)
- Long-distance problems
- Mounting of readers and antennas
- Failure modes (avoidance, software measures)
- ...

Current Situation



- The customer has to deal with up to 7 companies
 - only a few true system integrators
- Interfaces between different players lead to:
 - high level of coordination requirements
 - increased cost
 - loss of information
 - conflicts of interest
- Most current system integrators are not suited for multi-national projects

Infineon is the one Partner to handle complex Sub Systems One-Stop-Shop for all RFID Needs



Complete RFID System Solution

**Labels
(ICs and
packaging)**

**Printers,
readers,
antennas,
scanners**

(core reader
technology)

**Software
& network**
Integration
Adaptation
Additional
SW services

**Integration
& Services**
Consulting
Project Mgt.
System
integration
Additional
services

The RFID Solution Excellence Center, System Lab Graz

Tasks and Responsibilities

Taking responsibility of the RFID infrastructure requires bundled RF, software and process know-how and **extensive testing and verification**

Development and Verification Center

for application specific RFID system infrastructure (readers, tags and platform software)

Application Center

to see and experience various RFID technologies at work

Technology Evaluation Center

to evaluate RFID technology capabilities and limits in order to enhance their value

Training Center

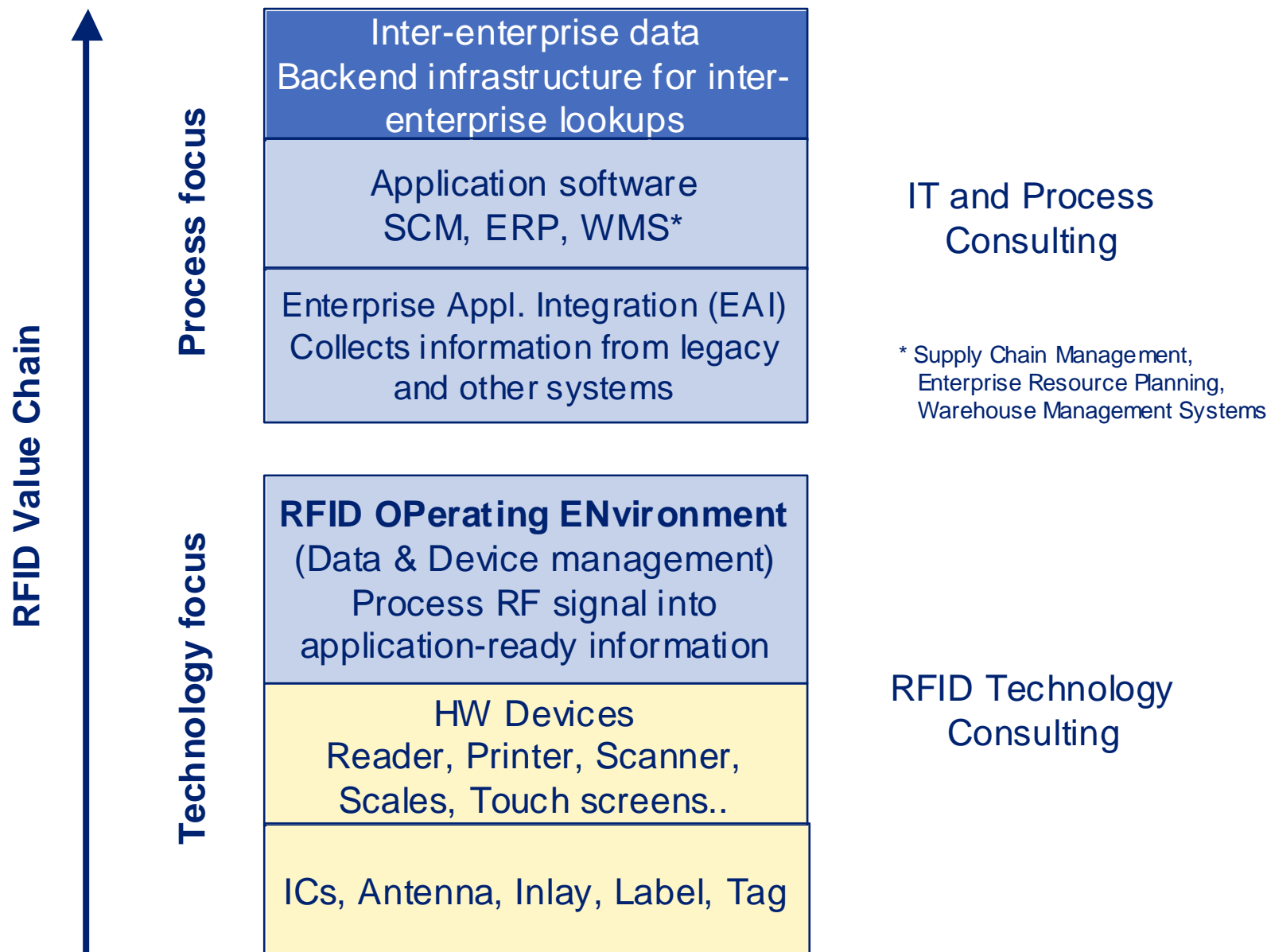
to train customers, partners and global RFID service staff

Product Portfolio

- Complete RFID solution competence from conception to implementation and beyond
- In-depth experience of RF systems, volume RF chip development and production
- A broad skill set and resource base: RF physics, hardware, manufacturing, software, project management
- Access to world-class chip foundry and packaging for RFID cost leadership
- Business scalability secured through training & partnering
- A broad supplier-independent technology basis
- Commitment to future RFID technology trends
- Extensive Quality Management competence

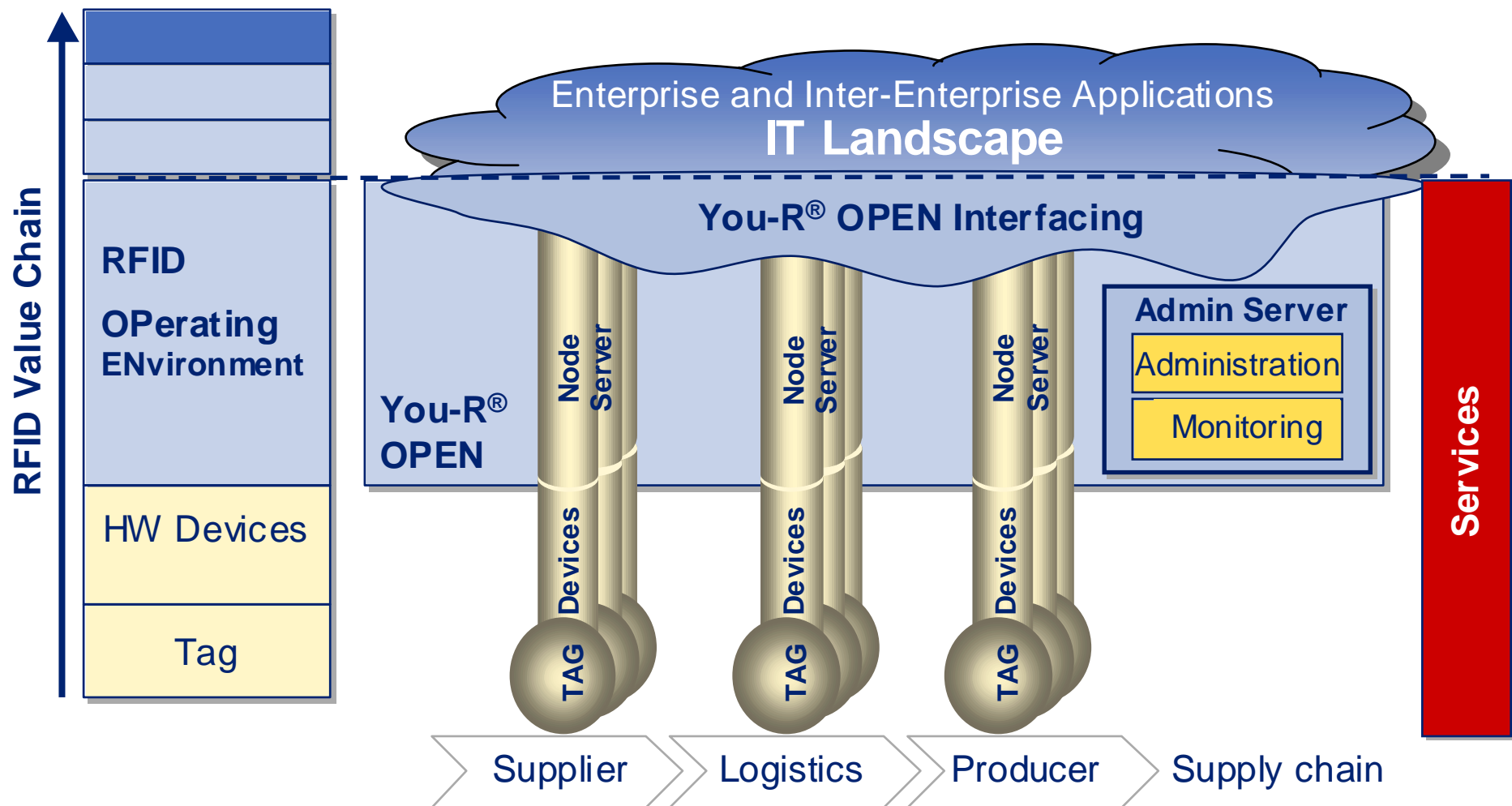
The PC needs an Operating System

The RFID infrastructure needs an Operating Environment

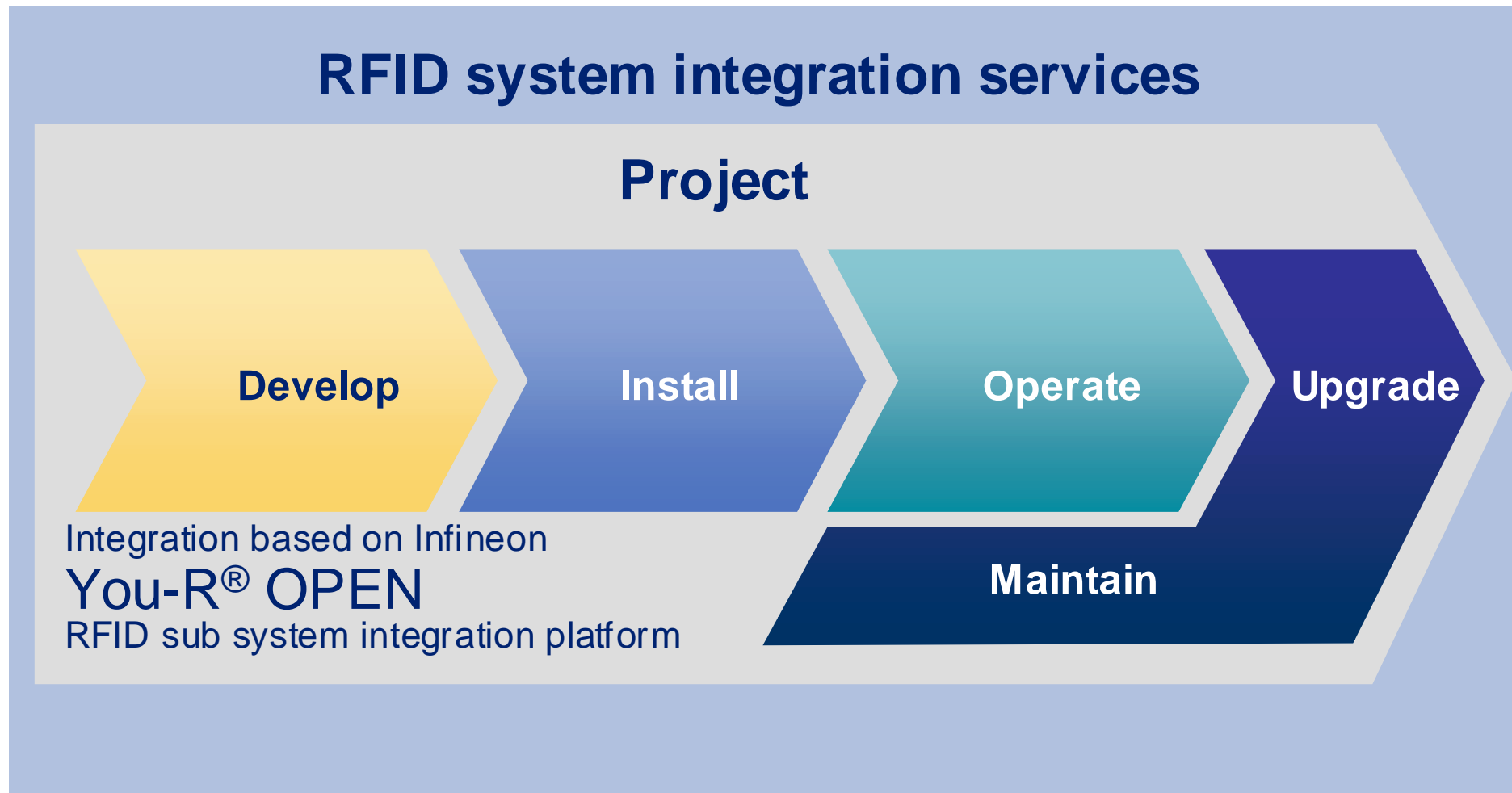


A distributed Server Architecture is required to configure, administrate and run scaleable RFID applications

You-R[®] OPEN - The RFID OPERating ENVironment



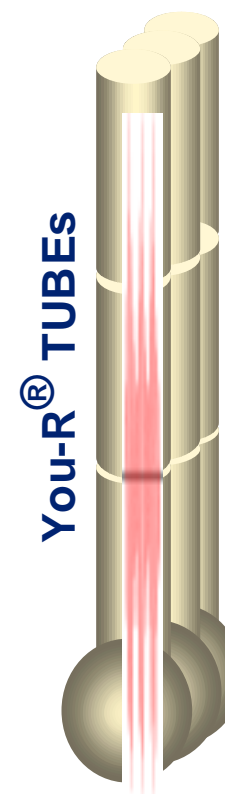
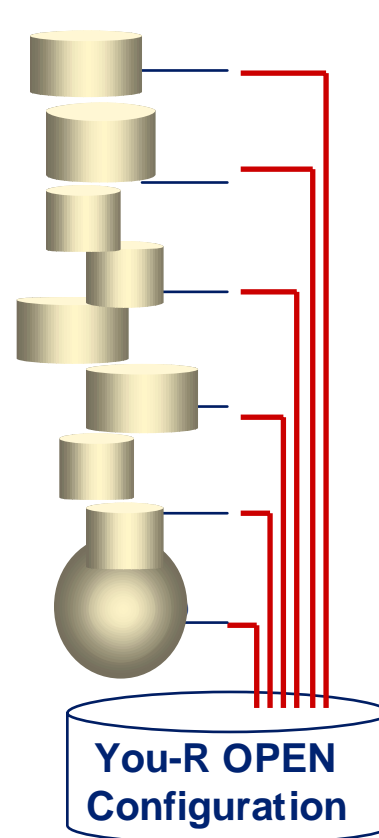
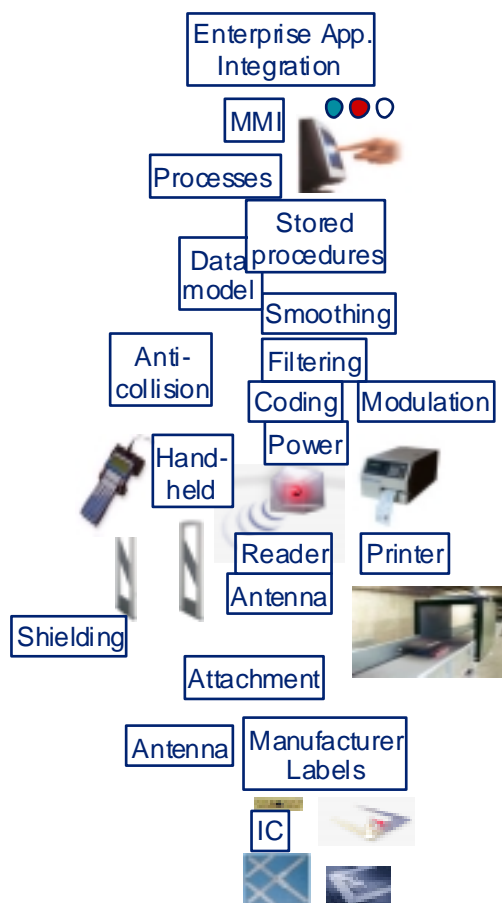
A complete RFID Integration needs to consider all factors of the project implementation



Globaly distributed multi company/multi site RFID infrastructure must be managed by the right bundle of services, tools and organization

Infineon offers tailor-made RFID System Solutions

RFID TUBEs are composed, tuned, installed, operated and maintained in Infineons You-R[®] OPEN (RFID OPERating ENvironment) Platform

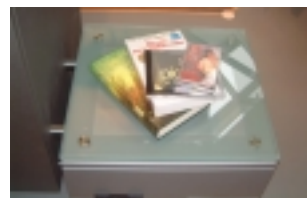


Preview to RFID Solution Excellence Center current Demonstration and Evaluation Stations

■ Ground floor

– Room A

- Infineon's Library Solution
- B2B Logistics Solution



- Paperless Silicon Fab



- Secure Supply Chain Demo



– Room B

- Process optimization in the textile supply chain
- High Speed RFID for Pharmaceuticals using PJM technology



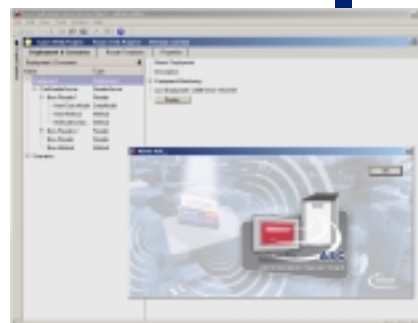
– Room C

- UHF Long distance identification



■ 2nd floor

- Your-R® OPEN
Infineon's RFID System
Integration Platform



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