-safety for people and environment!

Legislation on silicon RFID-tag and - Innovation with Nano Technology

-safety for people and environment!

EU Project DaGoB
Helsinki 13-14 August

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Company profile

DGM-*Security Solutions* is a innovative working company there develop secure system solutions with our partners, based on new technologically initiative to be used within supply chain logistics, surveillance, track and trace and product security in our core business area "Dangerous goods and hazardous substance ".

DGM-*Security Solutions* main business area is to bring and integrate Web-service information's in connection with silicon: (Access to legislation from a secure silicon RFID-tag).

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Vision: Our vision - the future we are striving for - is that:

- Our customers acknowledge us as the leading system supplier and collaborator when it comes to high-quality solutions with RFID & Nano technology - both in terms of performance and to the ensure "Safety for people and environment ".

- The rest of society local as global recognises and regards DGM-*Security Solutions* with respect as a result of our responsible conduct in relation to the laws of society, the principles of democracy, as local traditions and the environment - as well as our relations to the people whose lives and security circumstances we touch in connection with our technology concepts.

- We master advanced technology to gain value and benefit for our customer solutions and all our other interested partner.

Core value

- We will build our business on trust.
- We will be a secure and reliable choice for our customer, supplier and collaborator.
- We are enthusiastic for new technology and that, this can do for people, environment and our society.
- We will be global in behaviour, with local strength and presence through our sales partner the "DGM network ".
- We will be environmental and social responsible.
- We will with our vision and Core value in DGM-*Security Solutions* "-Safety for people and environment! "as foundation, live up to the expectations:

Be a responsible global collaborator.

Mission

That is our mission in co-operation with strategically selected Partner, successful develop and market supply chain logistics and integrate secure products surveillance solutions of high quality, On the most current administrative system platform like AS 400, SAP, Navision,Microsoft, national as Global.

Three strategic guidelines

1. Innovation, powered from the market: solutions to be solve by DGM Security Solutions or through strategic alliances.

2. Globalization.

3. Productivity powered of TQM (Total Quality Management.)

Strategy

Legislation is our foundation:

To offer the market solutions and services there will enter into as a part of the value creating process in our customers value chain.

To implement secure and safe solutions in collaboration and in accordance with our customers wish and satisfaction.

To secure visibility and show the possibilities for value adder to our customers own business by using our solutions.

To take active part together with our customer there have hazardous substances in there products and give them statutory correct transport/warehouse information to implement safe routine after, when handling hazardous substances and/ or dangerous goods in warehouse storage, transport or other form for shipment.

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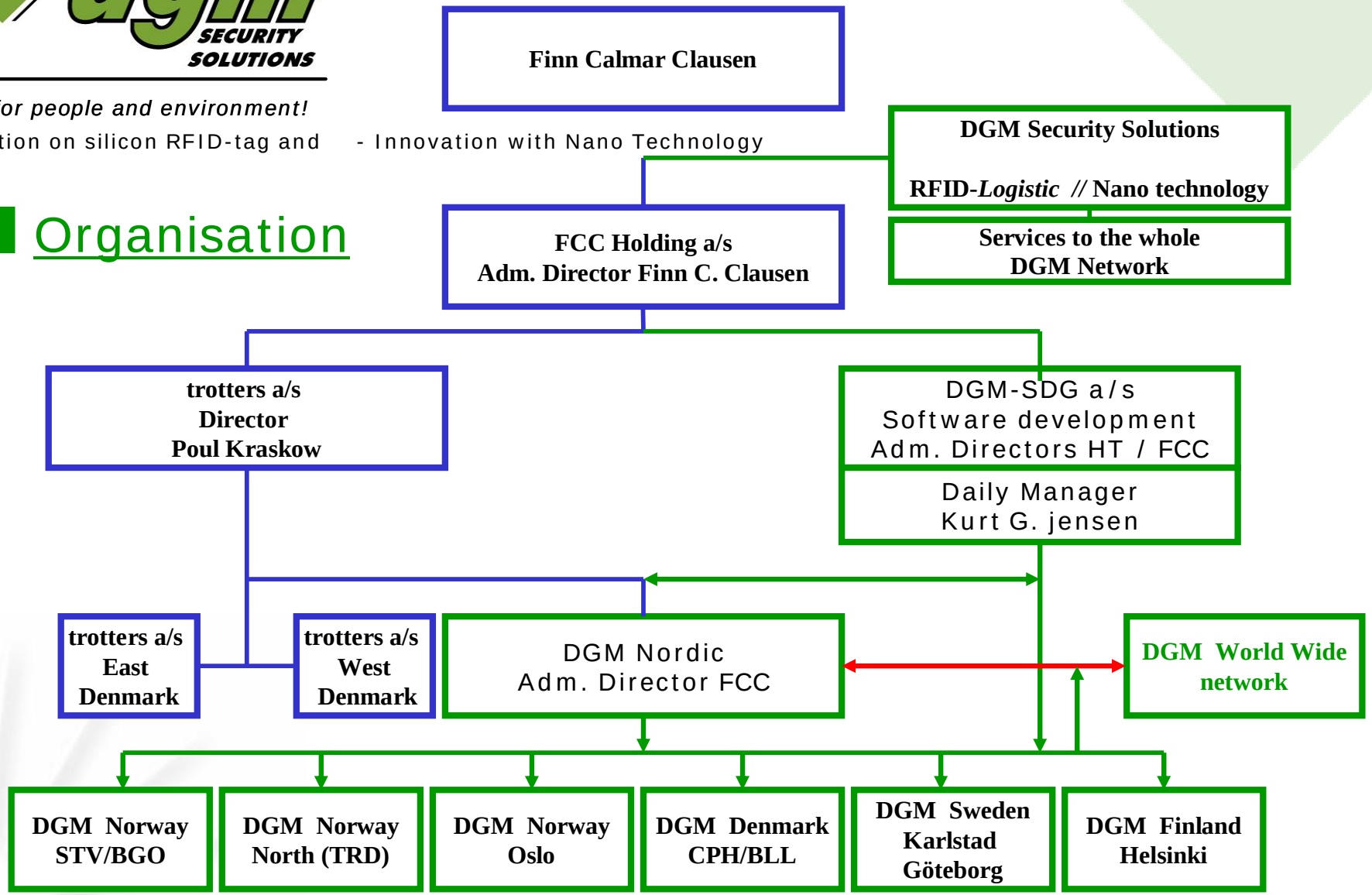
Organisation



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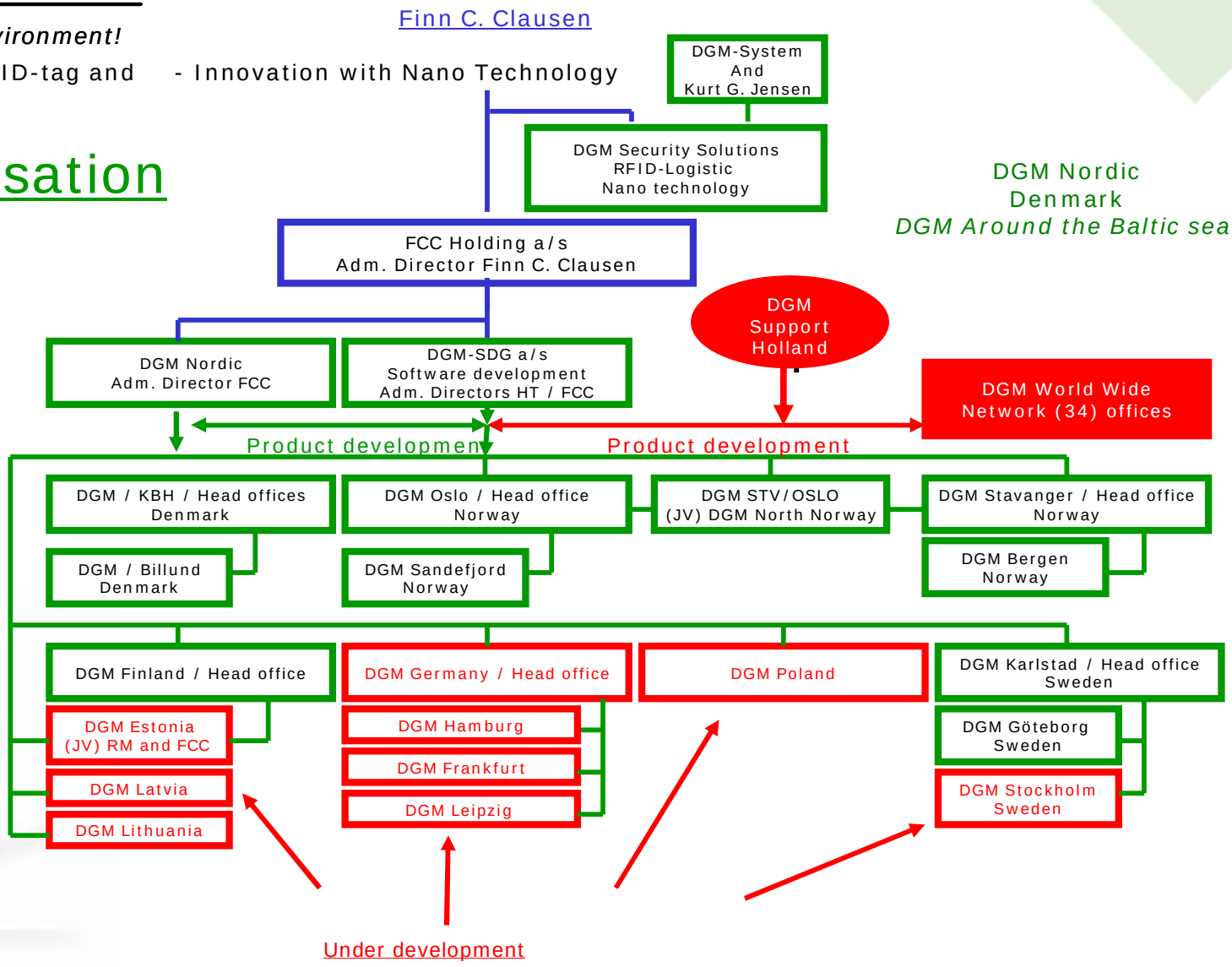
Organisation



DGM Nordic
Denmark
DGM Around the Baltic sea

1. DGM Poland
   In process now
2. DGM Germany
   Will come in process
   3Q-2007 / 4Q2007
3. DGM Baltic Countries
   Will come in process
   3Q 2007 / 4Q 2007
4. DGM Stockholm
   Arlander Air port
   Will come in process
   2Q 2007.

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DGM Leipzig
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Sales office Sweden
Under development

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Regementsgatan
653 40 Karlstad

DGM Estonia Tallinn
Under development

DGM Latvia
Under development

DGM Lithuania
Under development

DGM Poland
Under development

Denmark	Germany	Norway	Finland	Sweden	Latvia	Estonia	Lithuania	Poland
Population								In the world 6.5 billion
5.4M	83M	4.6M	5.2M	9.2M	2.3M	1.4M	3.5M	38M (152.6)

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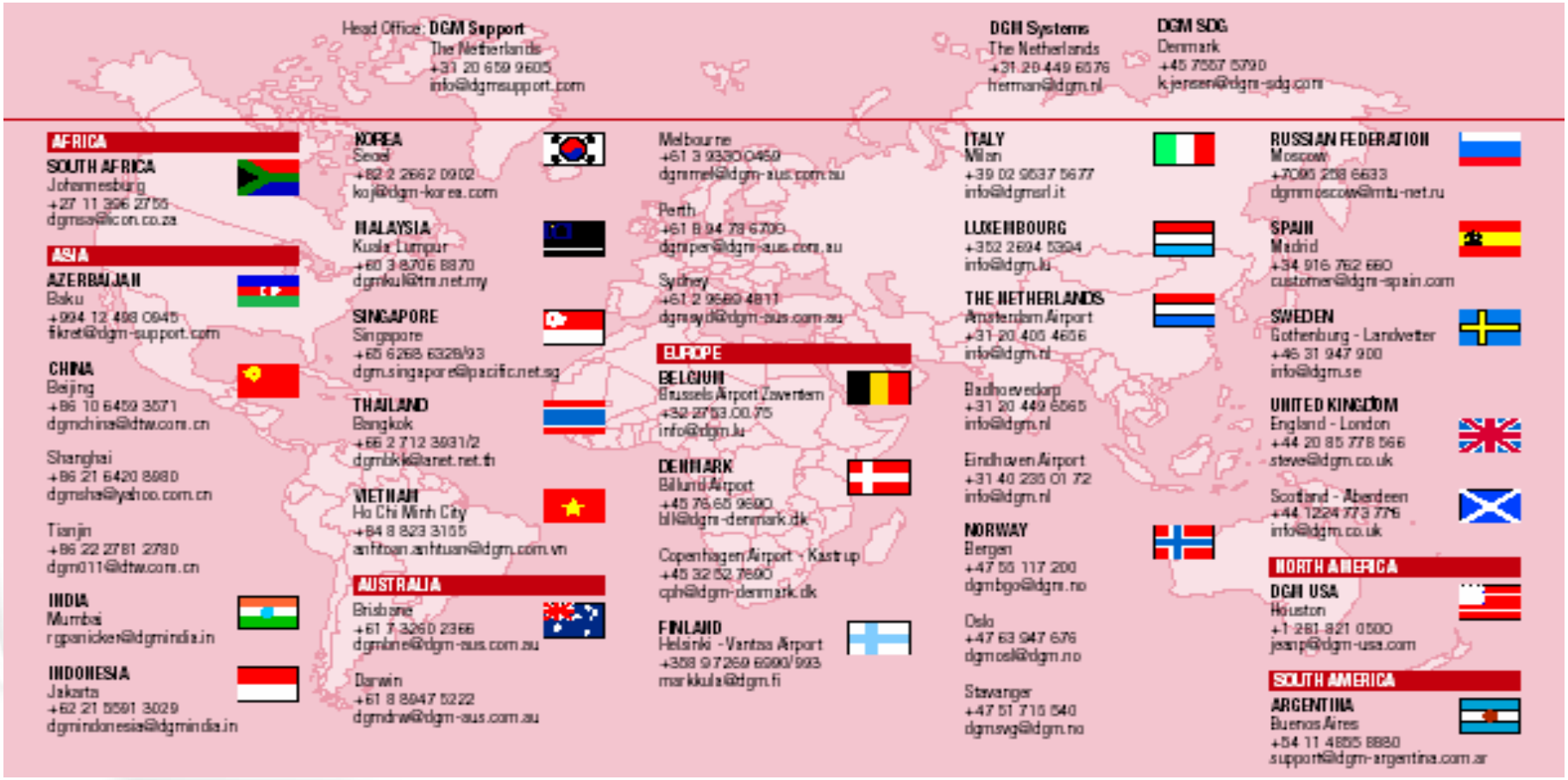
The DGM network



Safety in Transport

And

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Safety in Transport

Mayday... mayday...

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UPS!

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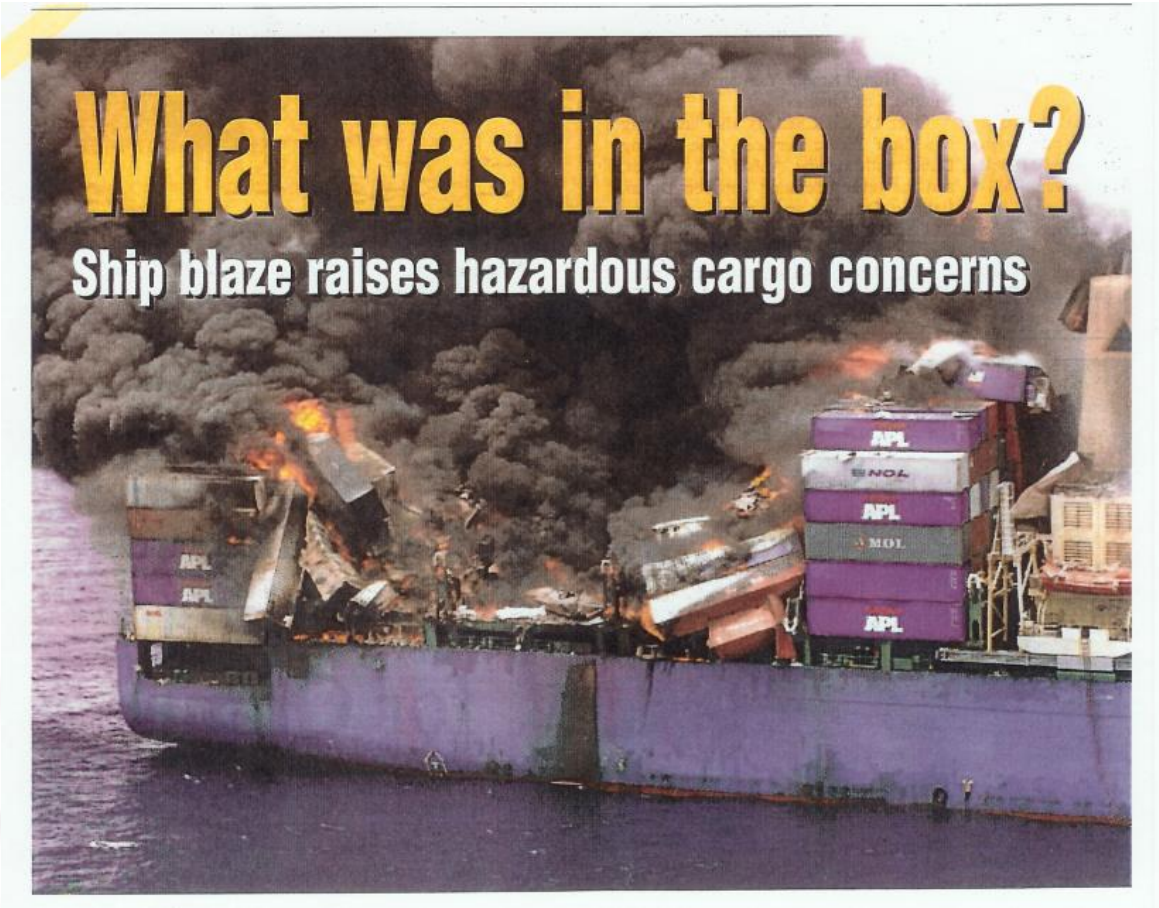

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Safety in Transport

a bit late to call the Coast Guard...

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Safety in Transport

OOPS... UPS...

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Safety in Transport
a chemical reaction...?

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A expensive UPS!

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Safety in Transport
this could happen, right here...!

Guess what...

In spite of all precautions, this can also happen with Air Cargo...!

Or on a normal flight...!

Safety in Transport
a simple battery...
Counterfeit ???

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So there are a need for our Services in *Security solutions* And help with Counterfeit prevention

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"The way to be safe is never to be secure "
(Benjamin Franklin)

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The counterfeiting industry will grow from US $500 billion to US $2 trillion in the next 20 years.

Product Authentication for brand Owners and manufactures.

If terrorism did not exist, counterfeiting would be the most damaging criminal act of the early 21st century.

Every year counterfeit products and illegal overruns rob companies & governments of hundreds of billions of dollars and counterfeit drugs & spare parts kill thousands of people.

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- RFID
- Technology
- GPRS
- Solutions
- Counterfeit

- INTRODUCTION TO RFID-tag TECHNOLOGY
- COUNTERFEIT-PREVENTION
- SUPPLY CHAIN LOGISTICS
- TRANSPORT ADR / IATA / IMDG
- TRACK AND TRACE
- WAREHOUS LOGISTICS
- HIGH RISK PRODUCTS
- DANGEROUS GOODS
- VALUABLES
- WEB-SERVICES
- HOW TO START

We connect secure RFID-technology to logistics solutions

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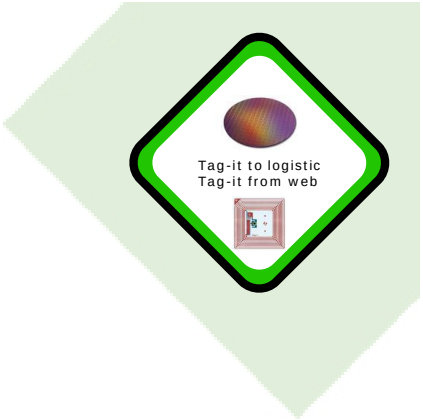

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- Innovation with Nano Technology

- RFID
- Technology
- GPRS
- Solutions
- Counterfeit

Secure RFID
Technology
For
Supply Chain Logistics

Dangerous goods
and
Hazard substances
to
- the production industry
- the transport industry
- trade and warehouse

All transport mode
ADR / IATA
IMDG / RID

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Mobile solutions

- RFID
- Technology
- GPRS
- Solutions
- Counterfeit

Supply Chain
Logistics
With VMS GPRS
And
Secure RFID
Technology

Dangerous goods and Hazard substances
Track and trace for
- the production industry
- the transport industry
- Trade and warehouse

All transport mode
ADR/IATA
IMDG/RID

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VMS – SDG // PDA/PC/Web solutions

VMS is a core module including an alarm central and a data receiver.

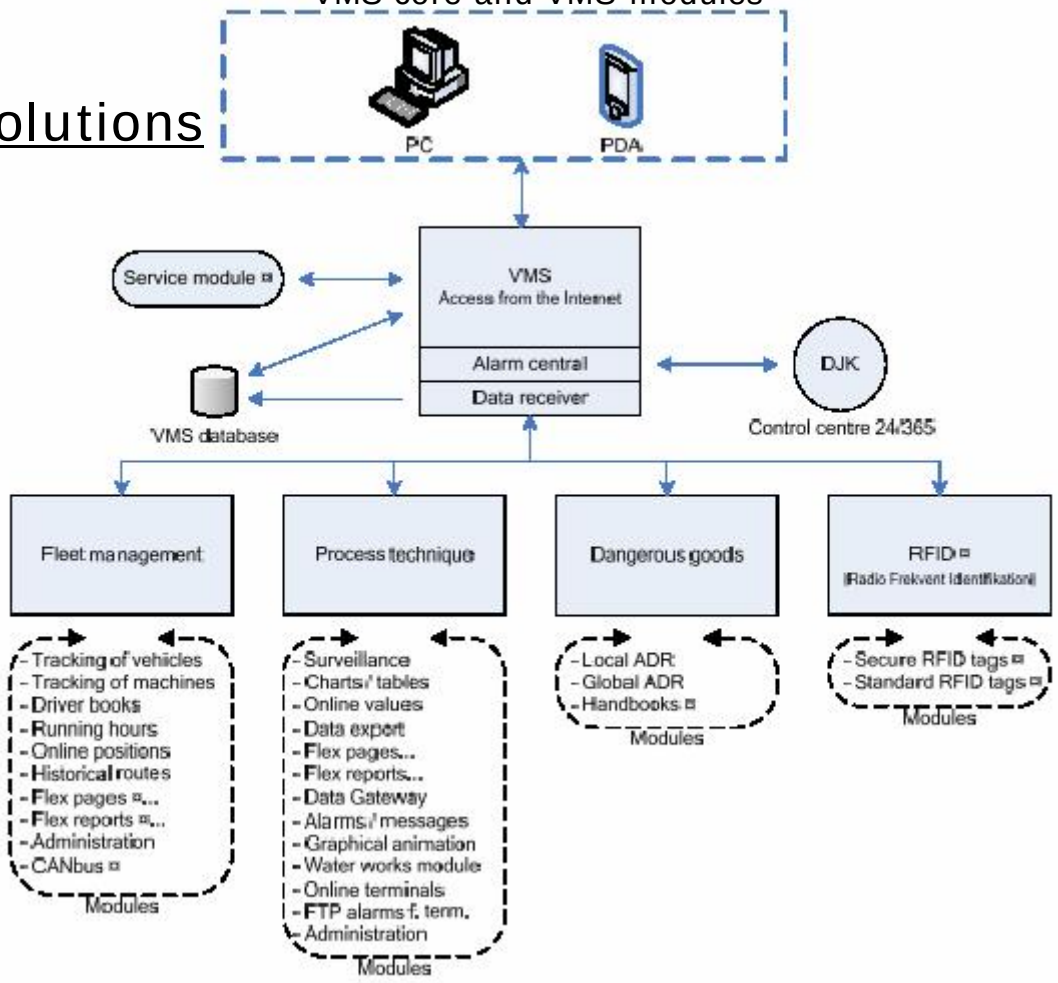
Main areas are process technique, fleet management and dangerous goods.

Each of the areas consists of modules as showed lowest in the drawing.

VMS can also connect to a control centre for monitoring alarms.

Next step RFID reader solutions

System drawing
The drawing shows
VMS core and VMS modules



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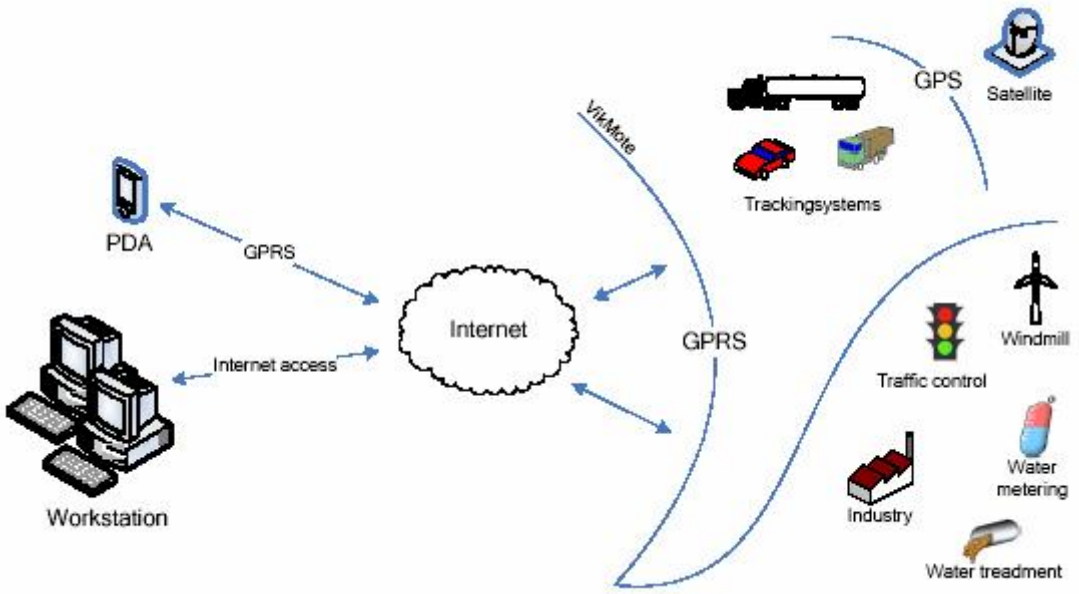
Communication overview
The drawing shows VMS and the communication possibilities...

VMS – SDG // PDA/PC/Web solutions

VMS communicates with the GPS devices and the control devices via the Internet over 2-ways GPRS.

GPRS is a very economic transport method for data.

You are always online and do not pay for the online time but only for the transmitted data.



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DANGEROUS GOODS - ON THE INTERNET

-truck driver, warehouse & administration!
-Dangerous Goods document and look-up!
-PC/PDA & Smart phone solutions!

Dangerous Goods data sheet

Direct web look-up for transfer to document.
Direct web look-up to dangerous Goods data
- Parcel and tank carrier data.

Transport Module 1.

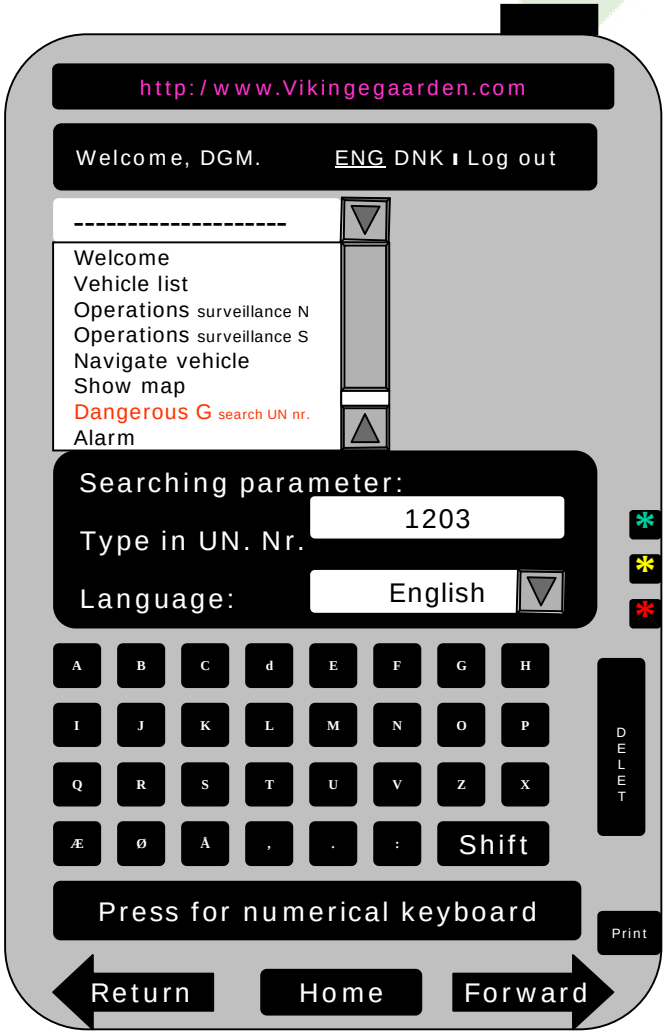
*Classification information:
- after selected UN number and/or
- after substance name

*Drivers check list:
- after selected UN number in 10 country languages.

*Transport emergency cards:
- after selected UN number in 42 country languages.
- and transfer to transport document.

Transport Module 2.

Track and trace
Position
Can bus data
Surveillance of vehicle
Temperature control
RFID tag module



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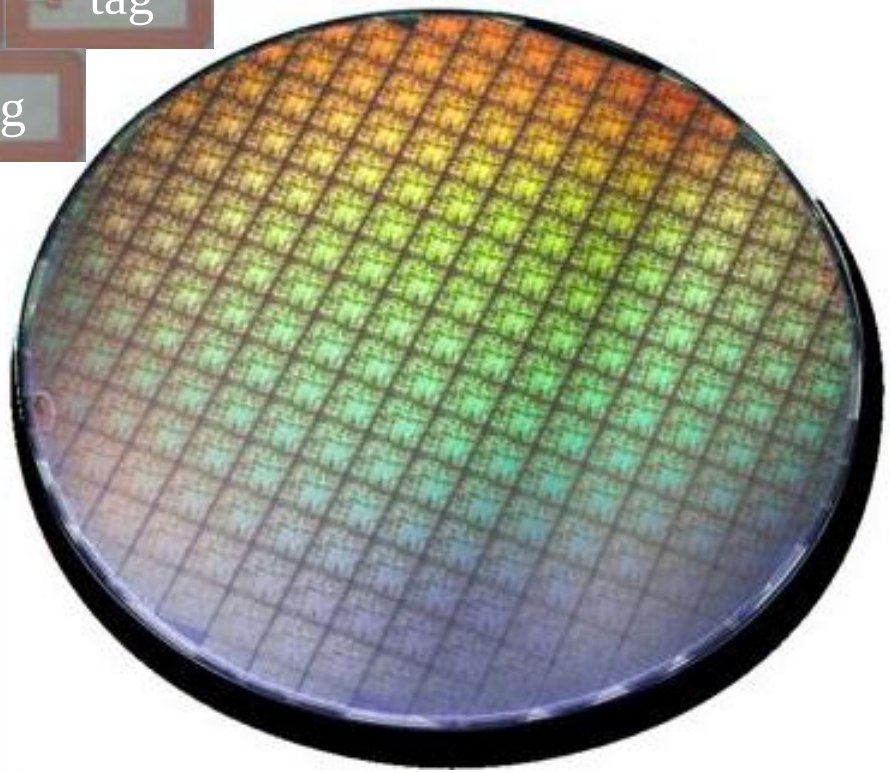
Silicon wafer



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RFID History

(Radio Frequency Identification Device)

RFID technology have exist for many years, and come really into a variety of logistic applications in the 1980 in lot of simple applications. (13,56MHz 20cm read distance and only with read function).

RFID technology have up to now pass through a serious development program to get it ś own standard. (EPC global generation II).

	LF – Low Frequency	HF – High Frequency	UHF –Ultra High Frequency	Micro Frequency
Frequency	125kHz-135kHz	13,56MHz	865 - 868 MHz	2,45 GHz
Standard	ISO 18000 Same standard i all regions	ISO18000-3 Same standard i all regions	ISO18000-6 / EPC GEN2 EN ETSI 302-208 Regional demand transmitting power. (watt)	ISO18000-4
Tag type *	Passive	Passive	Passive - active	Passive - active
Energy and Communication**	Induction from antenna, near field	Induction from antenna, near field	Electric field, far field	Electric field, far field
Read distance ***	< 0,6m	Up- to 1 m	2-3 m for Europe	Up-to 8 m
Licence and patent	No restriction	No restriction	EPC GEN2 perhaps royalty for read method	
Remarks	Good to metal and liquid. Widely used, Ripeness technology, Many installations,	Big selection of equipment, Wold wide within for smart-card.	A new technology on the way forward. Big expectation to cheap tags by big volume	

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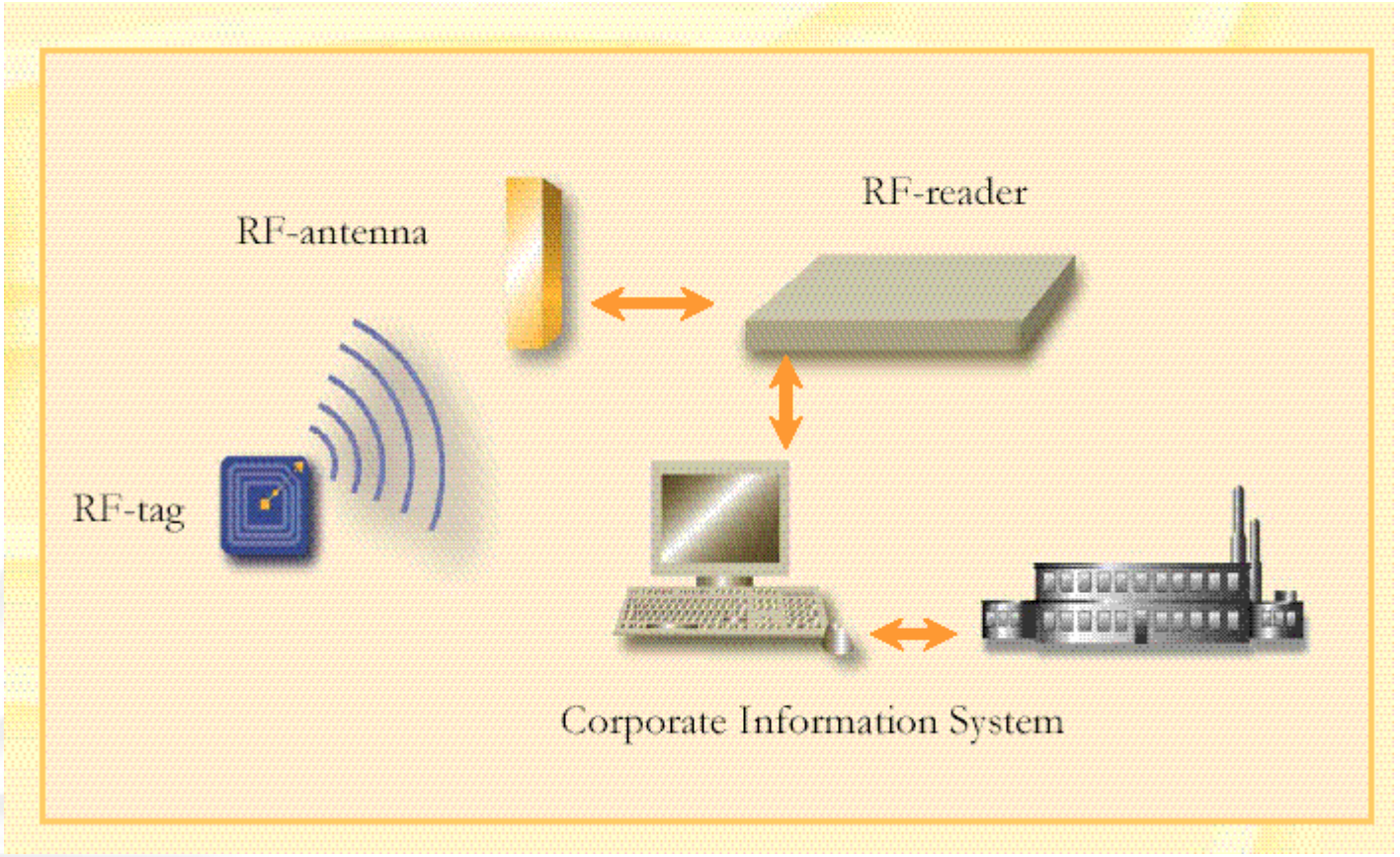
RFID principle



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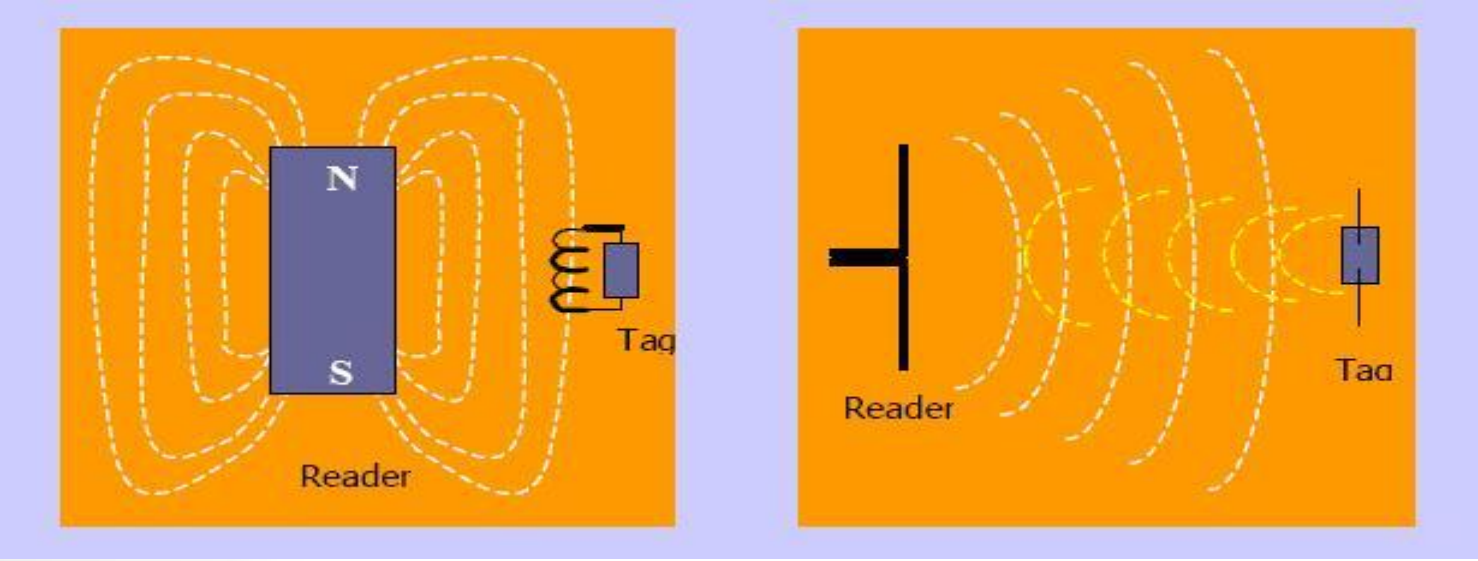
RFID to day

Our secure RFID tag is build on a ASIC there have encryption and a unique identification pr tag, that is the biggest difference from other standard tag´s on the market there all can be cloned and/or Changed. Our security is linked to algorithm protocol over web-services.

We can support the market with tag´s in all frequency areas. Our future is in HF EPC global generation II in silicon technology and the new electrical / organic polymer materials for passive and active tag´s.



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Where can secure RFID tag's be used.

- Access form and to our secure tag's is a unique key. That is the owner of the tag there take decision about who shall have access to a specific area on the tag and get information's.
  This information can go:(from a products birth to grave)when grave is the time the product go to be waste.

- In principle, RFID technology can be use everywhere there is a need for identification of a item.
  Our business basis foundations is, to use secure RFID tag technology within dangerous goods and hazardous substance, with this objective "to bring legislation down on silicon chip "in the whole supply chain system. Production,transport,warehouse, and when the product go into the last phase as dangerous waste.

- That give us enormous possibilities and a vast number of options: track and trace, warehouse logistic, secure document handling, slow moving stock control, counterfeit prevention. (You name it)Everything base on real web-service to be use world wide.

- The customer potential is enormous:Public/authorities, hospital class 6.2 substances, Mail services of dangerous Goods shipments, the army with equipment and depot logistic, aviation/air transport.
  Trades and industries: Paint and lacquer industry class 3. products, the chemical industry all classes, Warehouse facilities all classes inclusive high risk products, pharmaceutical industry, packing and containers producers (un packing to dangerous goods).

- Our secure RFID business model apply to closed supply chain systems, that means companies there have own rotation of products between production and underlying parties like, sales and distributions, wholesaler, warehouse facilities. Option: (Read only) (Read Write tag's) by using active reusable tag's,

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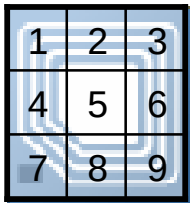
Understand a RFID business case

- Secure RFID ASIC access management model is: The tag owner have control over the access to the tag for both function, (read and write) and give special permission to an user with a key to open a specific cell or area on the tag.

  The owner of a tag can open this nine field in this showed example, A id code to use with the key and/or give other user access to some of the nine field. The Tag communicate one code back from a enquiry to a data cell, and make connection to the relevant web-services and deliver the information on PC/PDA/or another media.



- Our server approval application will deliver a reliable and trustful approval of a secure RFID tag. The customer can now use this trustful information as a effective reliable anti counterfeit prevention tool.

- A secure RFID ASIC solution can be integrated in a existing IT system sep-up (production and administration). Or as a stand alone implementation by the customer/company.

- DGM-Security Solutions, DGM-SDG, Vikingegaarden, trotters and the DGM network offer in co-operation between the customers and his system operating partner the connection platform and interface to delivery the XML file, to integrate web-services, and interface to systems like, SAP,AS400, Navision, Microsoft, and so on.

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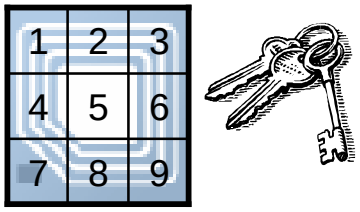
Secure RFID tag solutions.

- Our RFID Access Management application allows the tag owner to control access – both read and write – to the RFID tag.



- Our RFID Authentication application provides a trustworthy and reliable authentication of the RFID tag and can be used as an effective anti-counterfeiting measure.

- Our RFID solution can be integrated in existing IT systems or implemented as a stand alone solution.

- Our secure RFID solution can be integrated in supply chain logistics.

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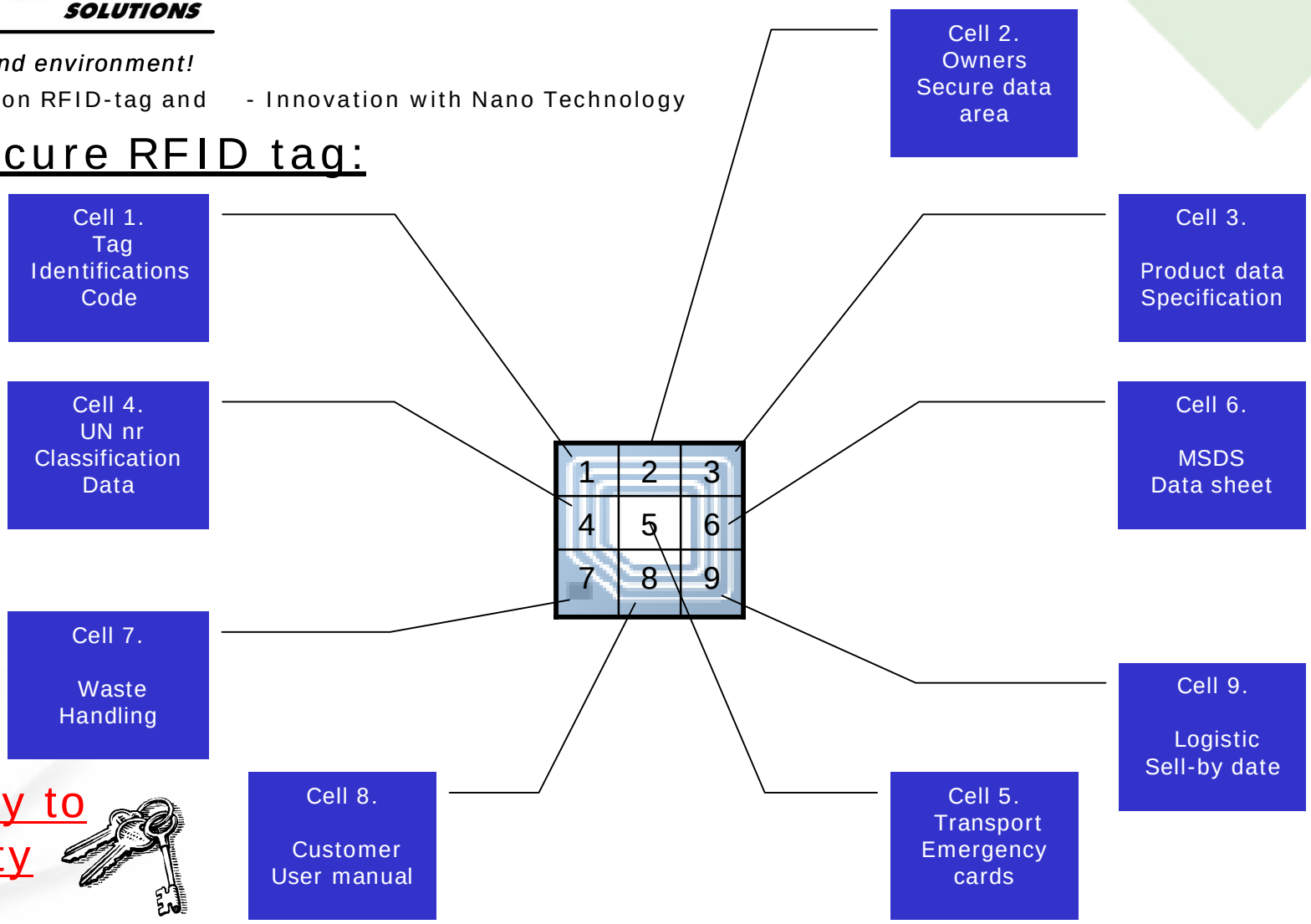
Secure RFID tag:



The key to Security

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Cell 1. Is the unique number our tag is born with.

Cell 2. Is the producers own protected secure and safe data area.

Cell 3. Can be product specification / productions date or other data.

Cell 4. Can be the products UN nr and classification if the product have dangerous property there have to follow the description for transport in ADR/IATA/IMDG convention and regulations.

Cell 5. Can be the access to one or more emergency cards the truck driver have to bring with him when he transporting dangerous goods "one card per country and a card the driver can understand ".

Cell 6. Can give access to a (MSDS) Material Safety Data Sheet there have to follow any product there can harm people, animals and environment. "How to do if you get something in your eyes, and information's about transport code and so on.

Cell 7. Can be information's from the producer about safe waste handling of the product.

Cell 8. Can be the user manual of the product real time access to the newest user information's for correct use.

Cell 9. Can be the stage the customer get the secure key to use with consideration to maintenance or other some other communication with the producer or dealer (Web access and/or other useful customer services information's as guarantee, sell by data) and so on.

Above-mentioned is only examples on scope of application for secure RFID-tag

Cell 1 & 2 in this example are protected with an security key, the rest is open for public use with this type of reader there can access this secure RFID-tag.

In cell 2 can the producer or owner have physical protected supplier data for storage, and the rest open for web service access.

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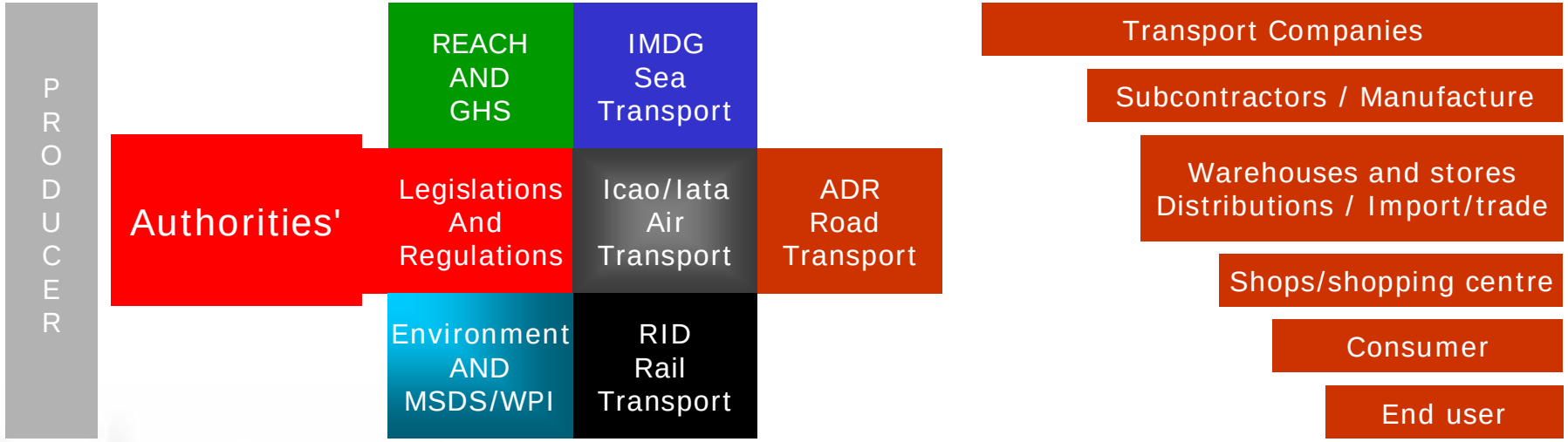
Legislation is our foundation:



One stop shopping strategy

- That require concepts

1. Is it legally! ?
2. What will other think! ?
3. Is it right! ?

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Market:

"We have to keep to the fact what the market actual require "

– and not to what we belief the market require.

1. Is it legally! ?
2. What will other think! ?
3. Is it right! ?

" Statement have to be transform into products and/or services, there generate a safe profitable growth for our customer/companies. "

together with high security for there end user/customer.

And statement have to show reliability; You get exactly what you have expected, and no counterfeited product from our company.

Companies have to use new secure technology as a marketing tool!

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PROCESS / / CONCEPT SALES:

The window to the customer is:

-Safety for people and environment!

The three RISK Management questions is?

1. Do we/you comply with the legislation?
   - are we aware of all the transport regulations and the new changes in the regulations within Dangerous Goods and Hazardous substances.
2. Are we/you doing it right?
   - do we handle Dangerous Goods and Hazardous Substances in the right manner.
3. What does your customers say?
   - Can we look at our self in a mirror and say:
     "My company are in total control when talking handling and legislation within Dangerous Goods and Hazardous Substances "

If the company are able to answer yes to these three issues, the company are in the right direction.

If not, we DGM are able to help you with professional solutions. Including new technology solutions.

NO AUTHORYTY HAVE CLOSE A COMPANY: BUT YOUR CUSTOMER CAN DO IT:!!!

We connect secure RFID-technology to logistics solutions

"The way to be safe is never to be secure "
(Benjamin Franklin)

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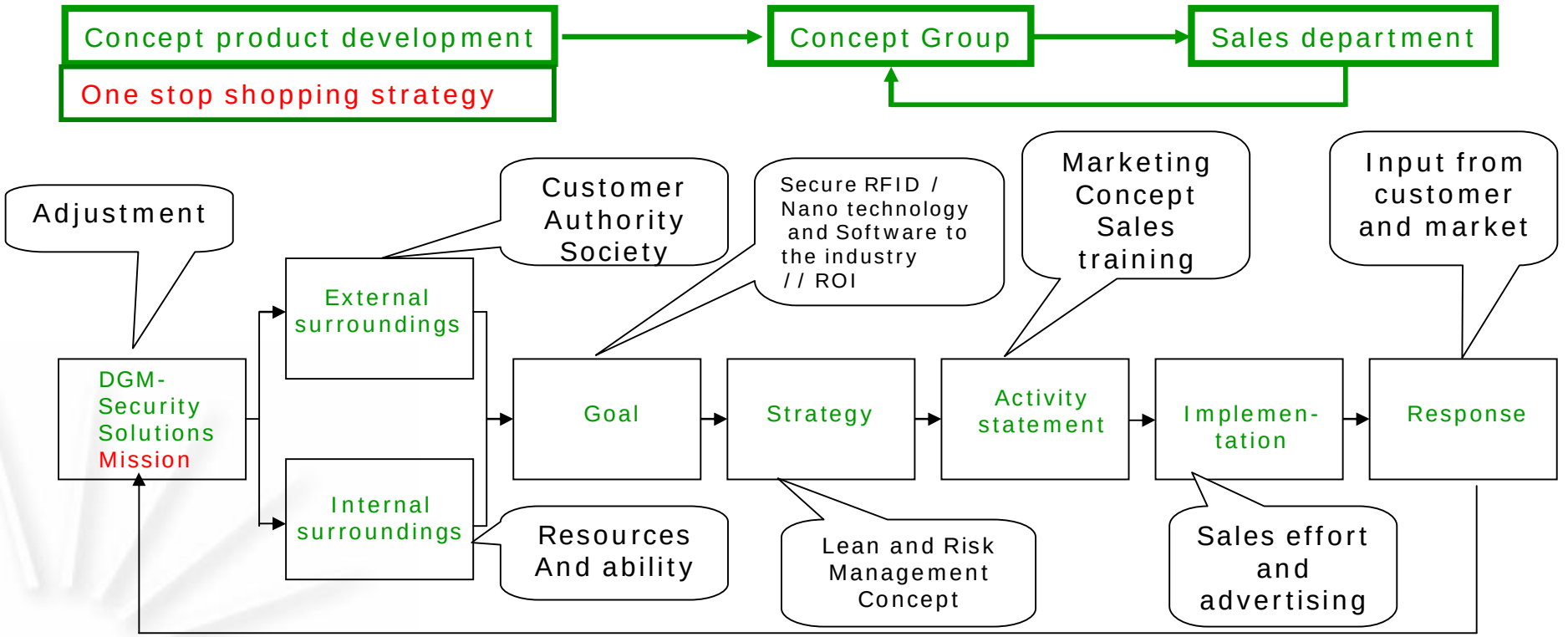
- Innovation with Nano Technology

DGM Security Solutions sales and development:



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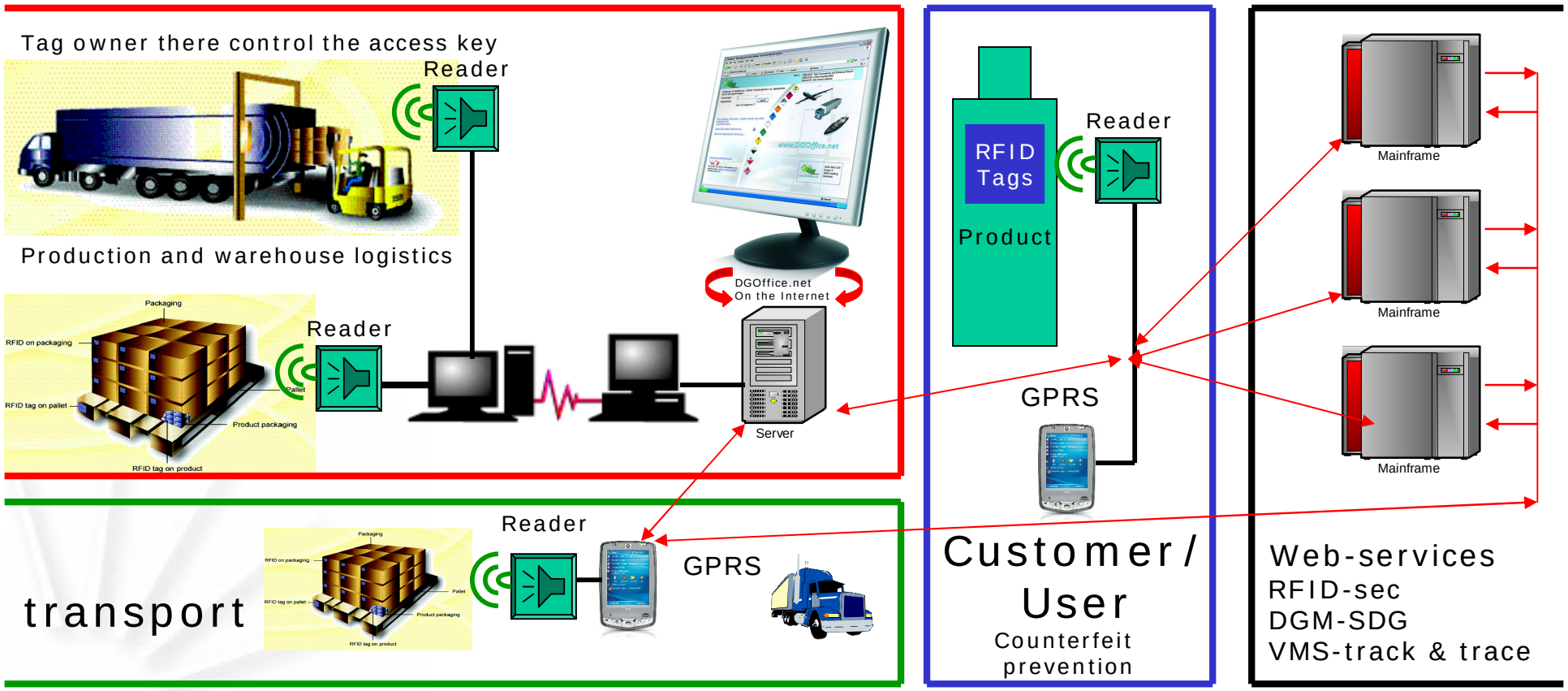
RFID Application



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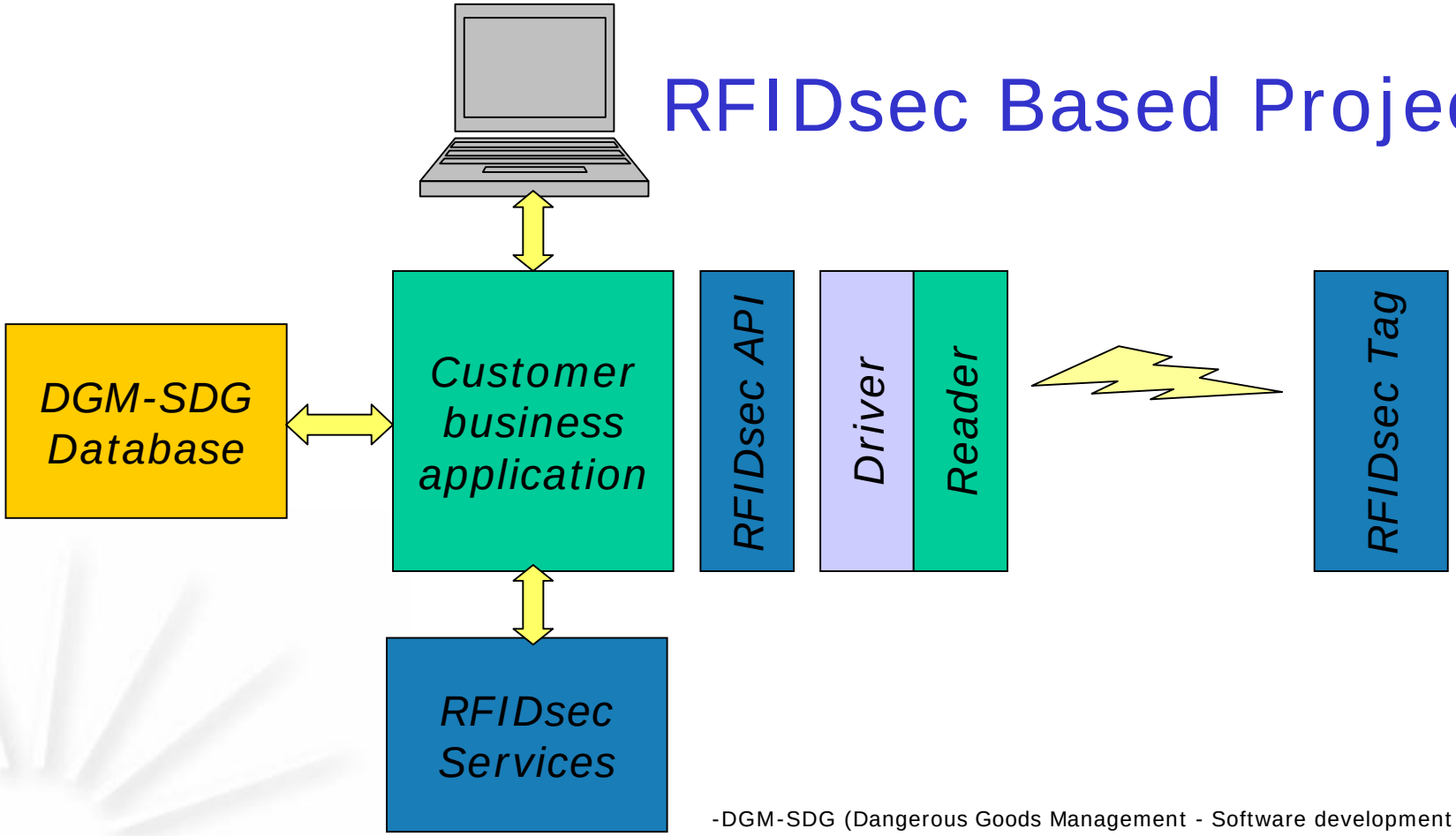
RFIDsec Based Projects



-DGM-SDG (Dangerous Goods Management - Software development Group)
- API (Application Programming Interface)

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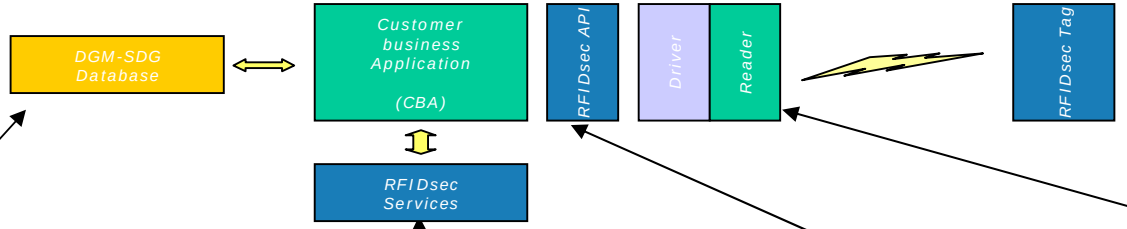
RFIDsec Based Projects



The Customer business application will call the DGM-SDG database for relevant information on legislation and dangerous goods management precautions.

DGM Security Solutions or a partner will supply the software need to communicate with the DGM-SDG database.

The Customer business application will need to call RFIDsec services on the internet to perform "Authenticity Check "and other services. The Customer business application is using the RFIDsec API to call the RFIDsec services. The Customer business application is the user interface and "what the user sees on the monitor and interacts with ".

The API is supplied by RFIDsec.

The RFIDsec API comes with reference implementations' and code examples and Application Programmers Guide.

The implementation/ integration of the API functions in the Customer Business application is done by DGM Security Solution or a partner chosen by the customer or DGM Security Solution.

Communication between the Customer business application and the RFID tag is performed using a RFID reader. The RFID reader needs a reader driver, which is supplied by RFIDsec. The Customer business application is using the RFIDsec API to communicate with the RFID tag.

The API is supplied by RFIDsec.

-DGM-SDG (Dangerous Goods Management - Software development Group)
-API (Application Programming Interface)
-CBA (Customer Business application)

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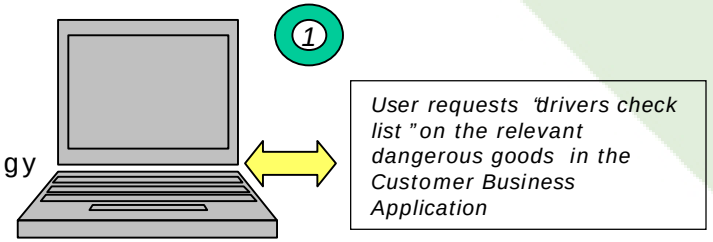
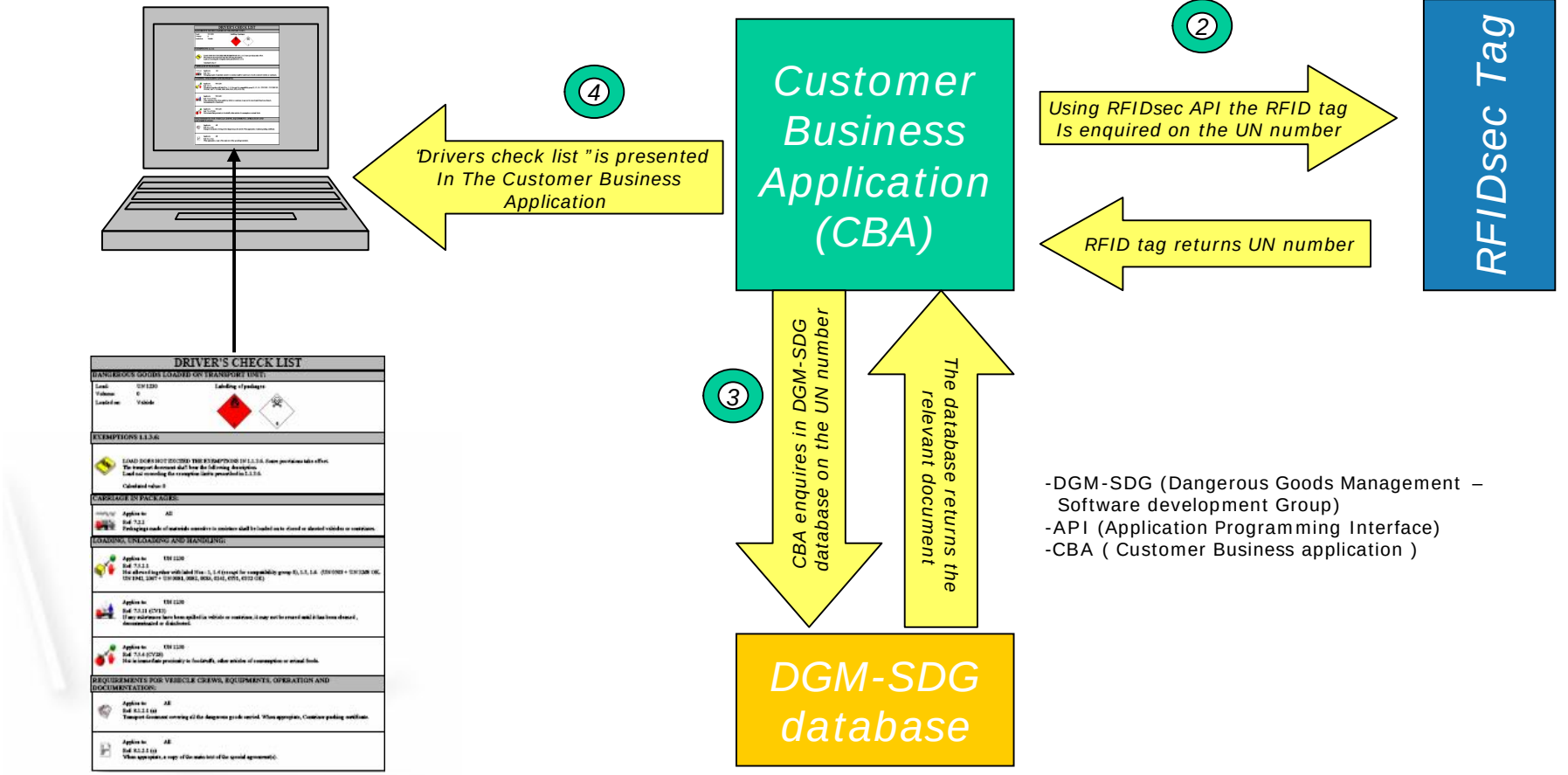


Request "drivers check list UN nr.XXXX "



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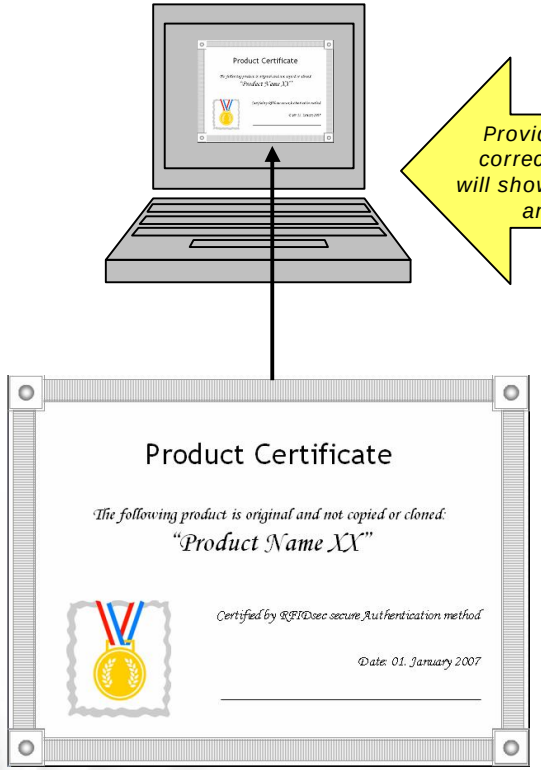
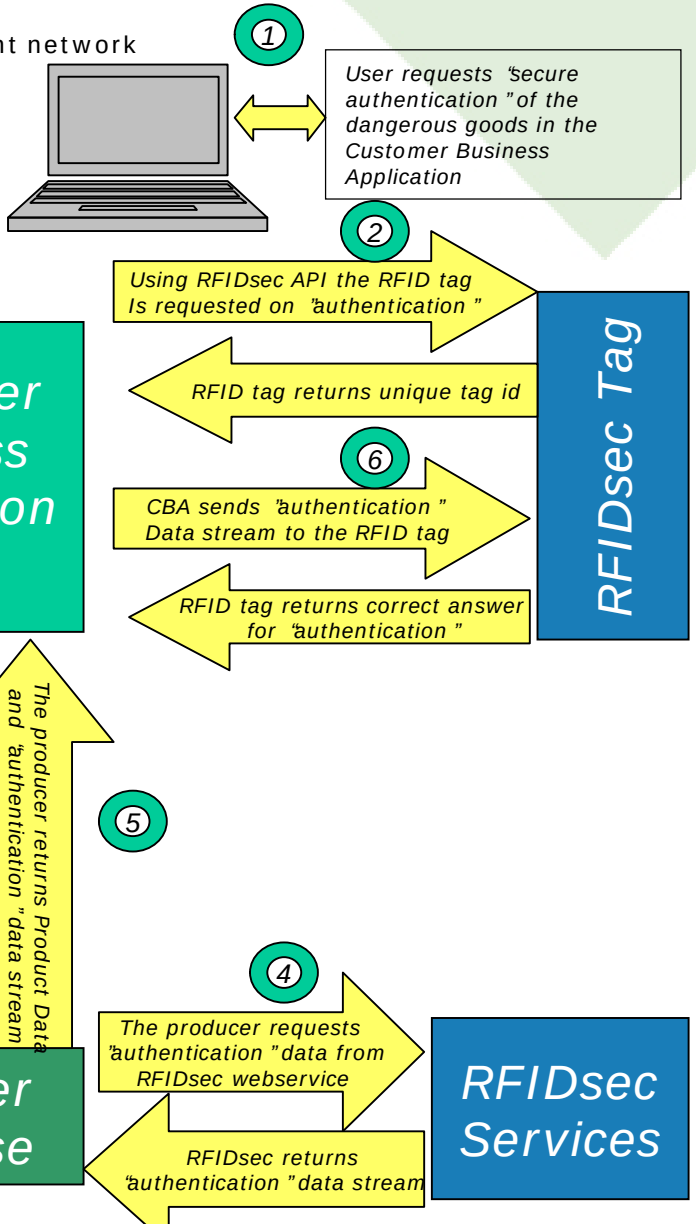
Request "authentication "





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'Key Administration "

(The producer)

1

Owner has one "master key" to the RFID tag. Owner requests an additional data area with a separate secure key.

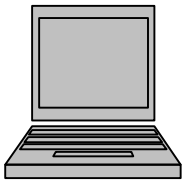
2

Using RFIDsec API implemented in the CBA an extra data area is created with an secure key

An extra data area is created using the secure key

RFIDsec Tag No. 090909

Customer Business Application (CBA)



(e.g. a warehouse etc.)

Customer Business Application (CBA)

4

The owner can distribute the secure key and grant others access to the secure data area Secure distribution is managed In the CBA

3

CBA accesses the data area using the secure key and can add Data to the area

The RFID tag authenticate the key and performs the requested tasks based on functions in the API

5

CBA accesses the data area using the secure key and can add Data to the area

The RFID tag authenticate the key and performs the requested tasks based on functions in the API

RFIDsec Tag No. 090909

RFIDsec Tag No. 090909

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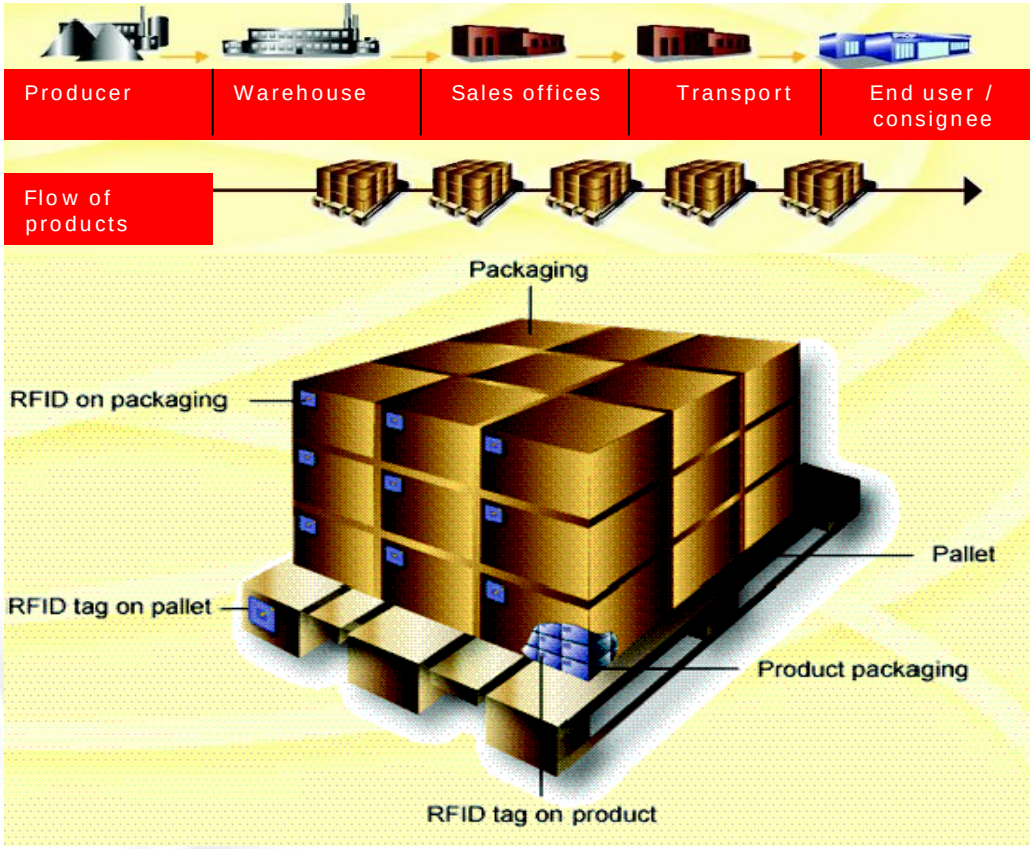
Tagging of radioactive isotopes & logistics

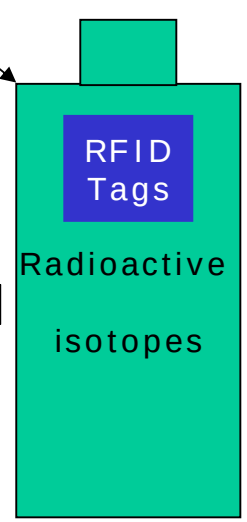


Example for access code-Contents on a RFID tags

1. Identification of product and productions data.
2. Access to piece ID journal.
3. Description of the piece.
4. Access to user manual.
5. Transport code class 7 UN nr XXXX
6. Classification of radioactive Isotopes
7. Package information.
8. Original carrier data.
9. Consigner data
10 And so on.

On RFID tag:
Unique ID code with look-up
Access to web services.

PC or PDA based Web-services



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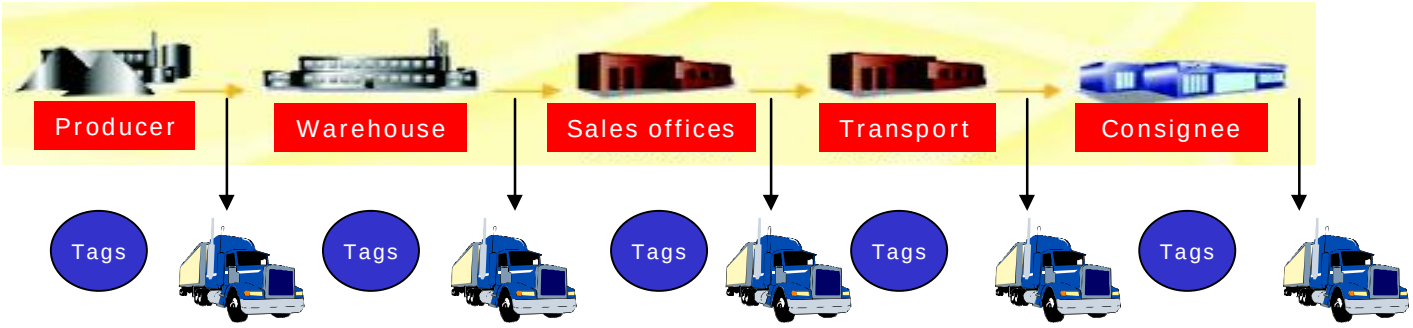
Secure transport with secure RFID Logistics



Tags contents: after unique id nr. to transport

1. Producer name:
2. Product name:
3. Product data:
4. Safety regulations: 00-0 to l 5-6
5. Un nr. XXXX
6. Classification (KL 7 PG xxx))
7. Product from date: 24-09-2006
8. Product lot nr: 2536
9. Packing form: plastic, paper, or others
10. Radiation hazard: yes
11. Waste code: XXXX
12. Disposal code: XXXX
13. Handling procedure
14. Safety procedure / or MSDS
15. Special /extra equipment for transport: Cold store
16. Hospital name and location
17. Sell-by date.
18. And others after wish / / database dependence

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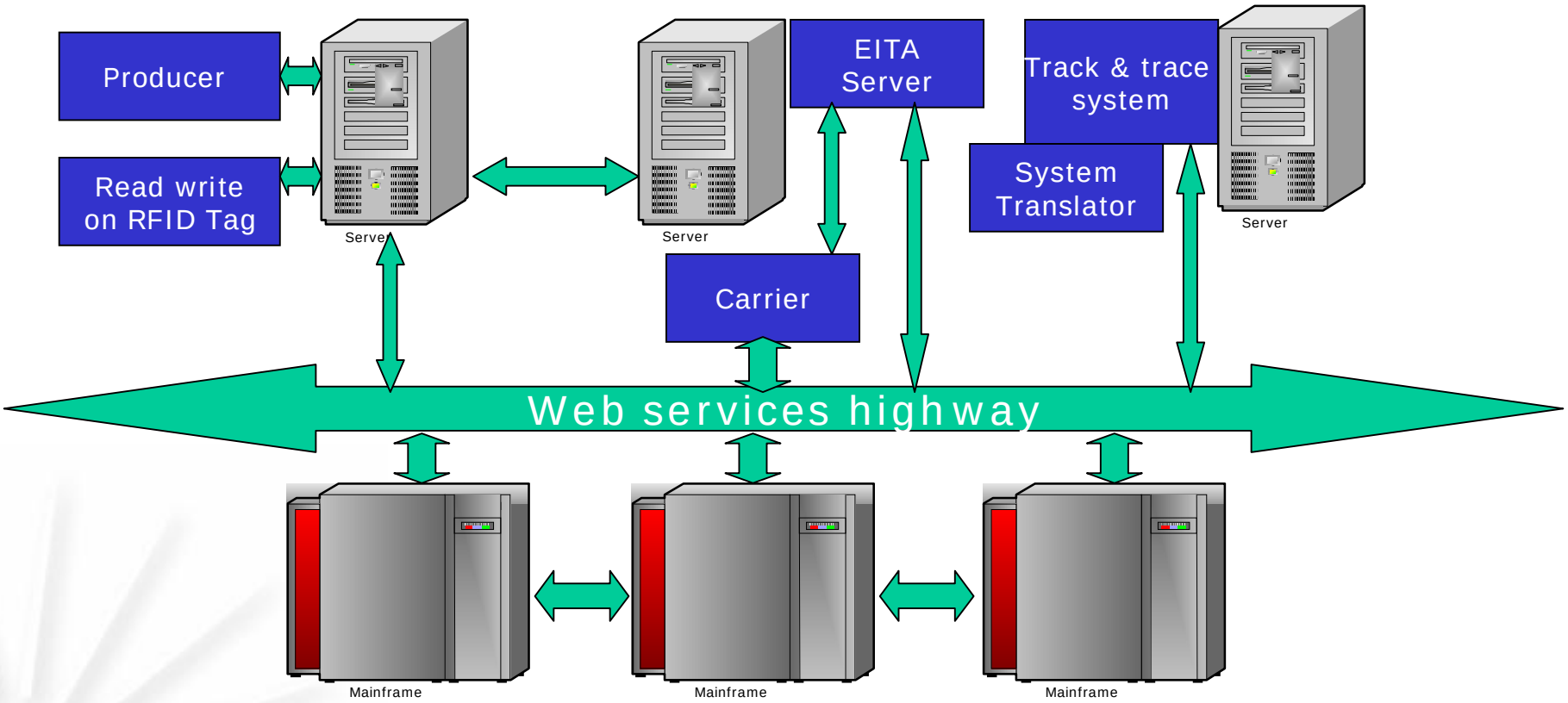
tag information's highway / RFID Logistics



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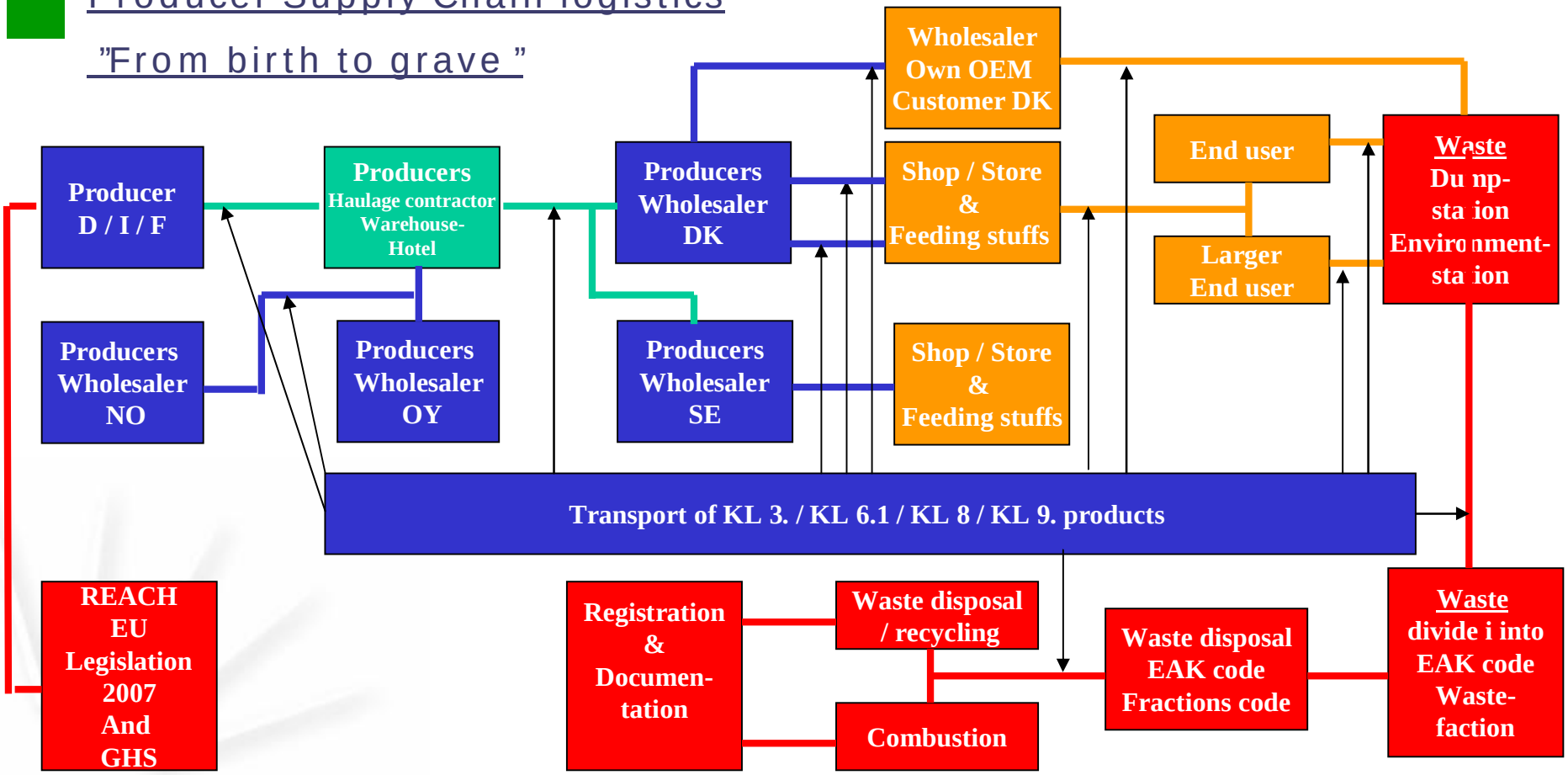
Producer Supply Chain logistics

"From birth to grave "



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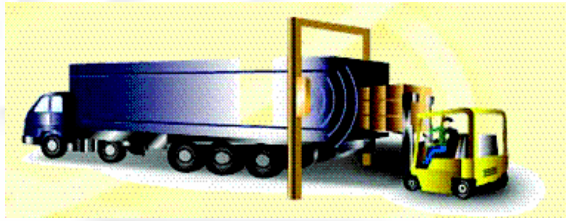
PDA / DGOffice / Secure RFID warehouse logistics



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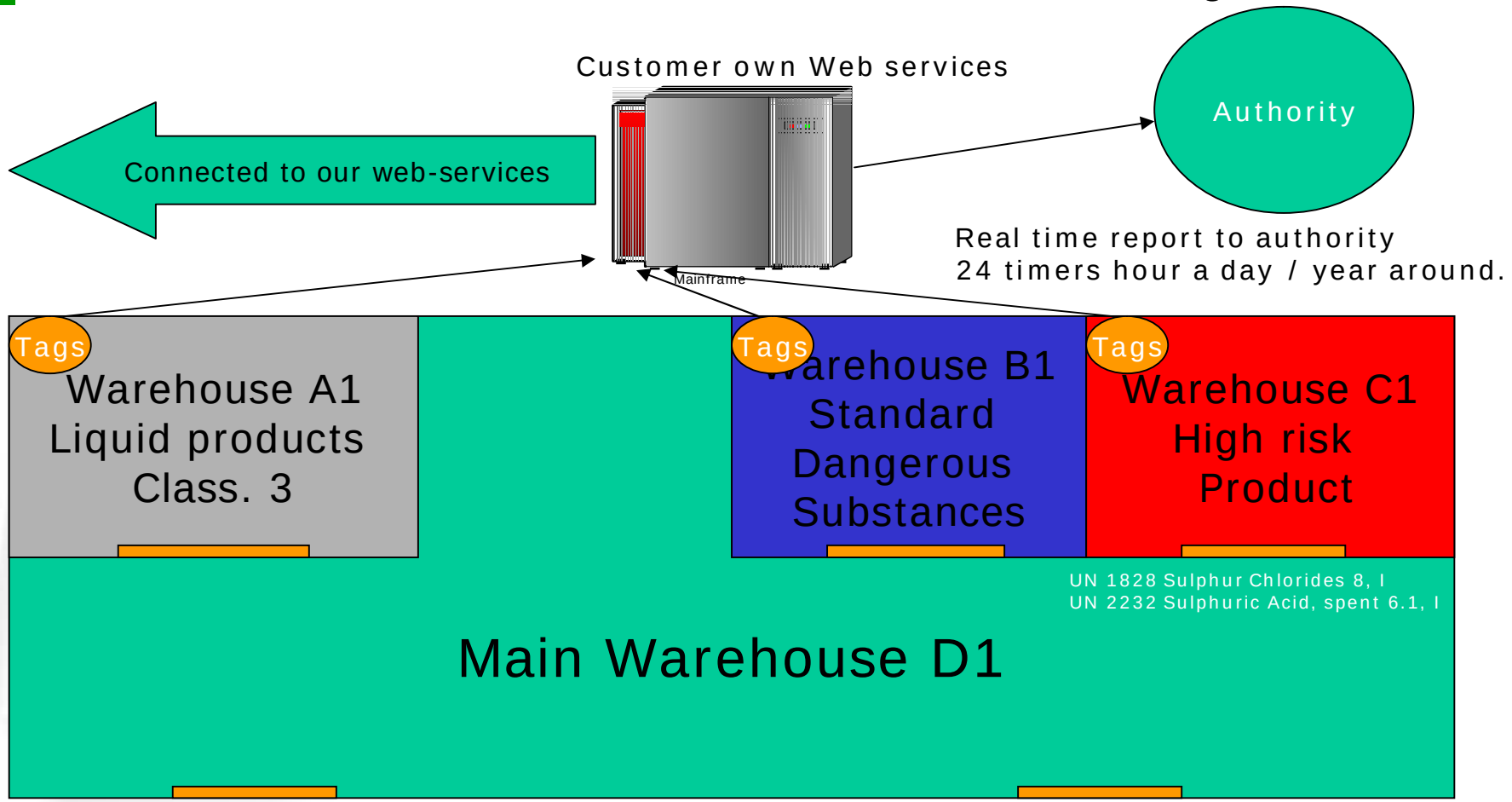

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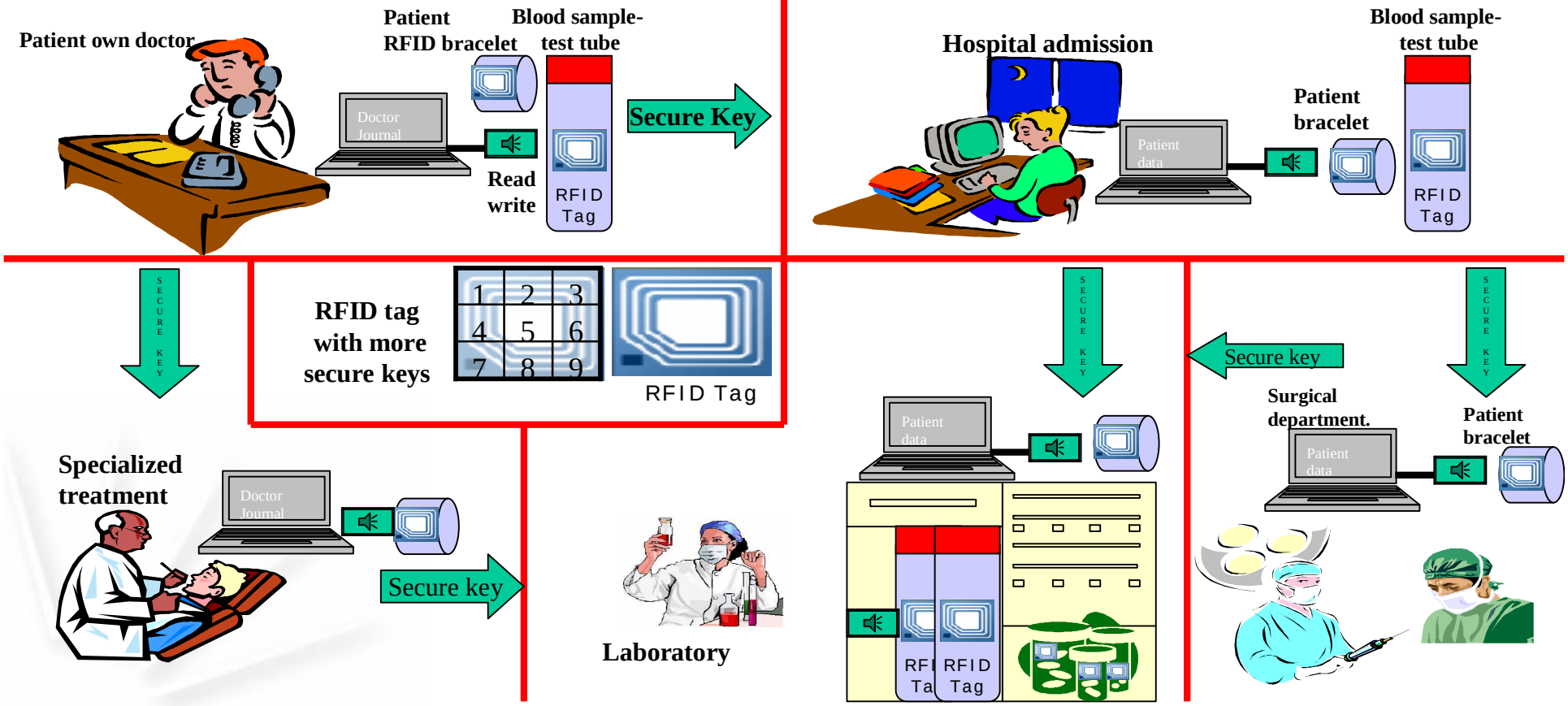
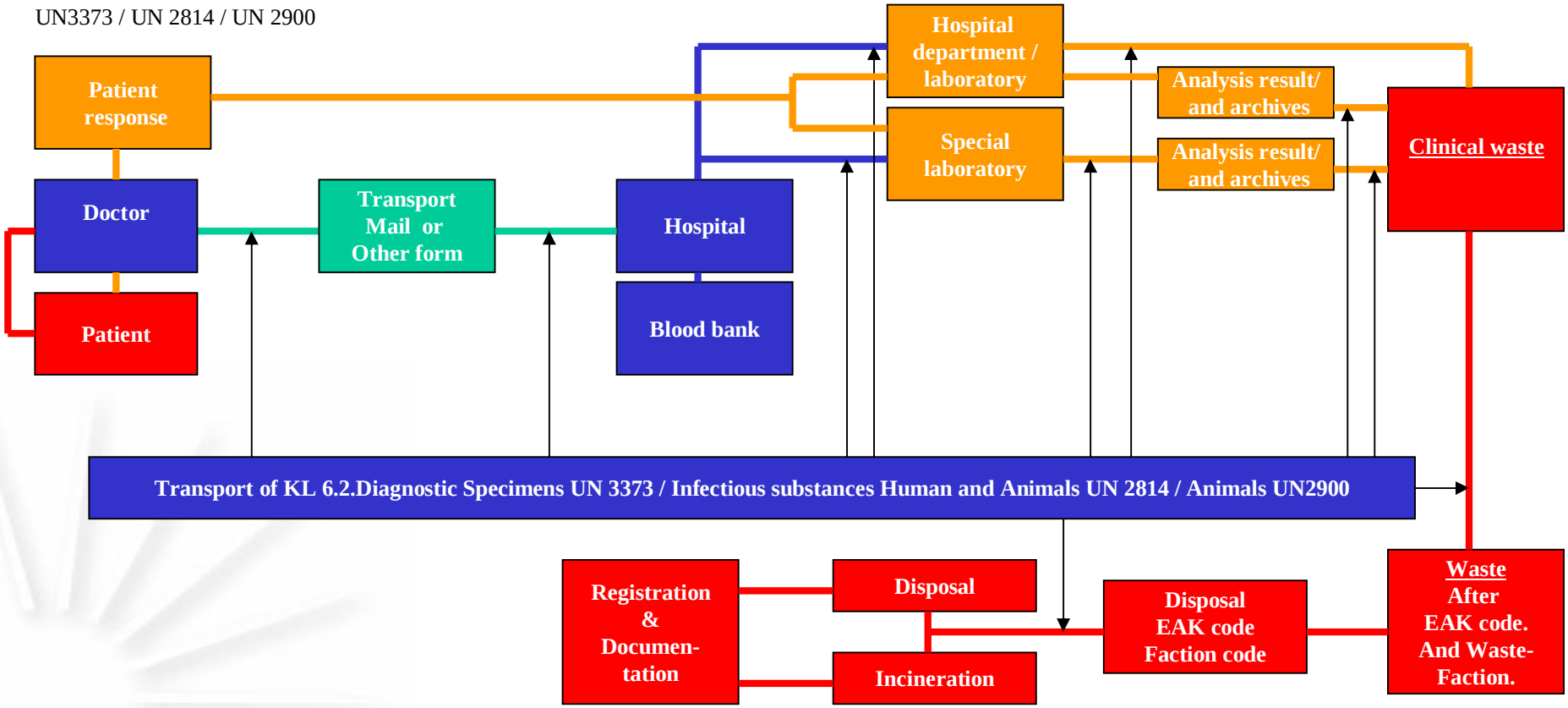
A RFID business case

Secure RFID Logistics



Hospital / Secure RFID Logistics

Classification class. 6.2
UN3373 / UN 2814 / UN 2900



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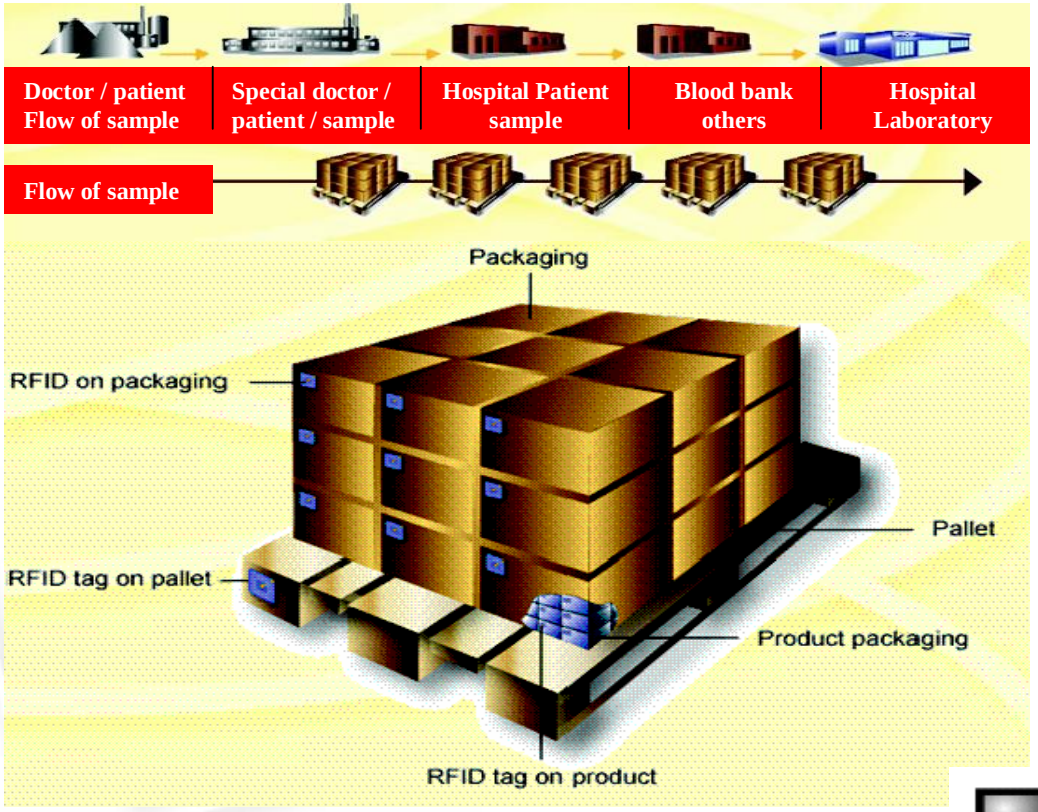
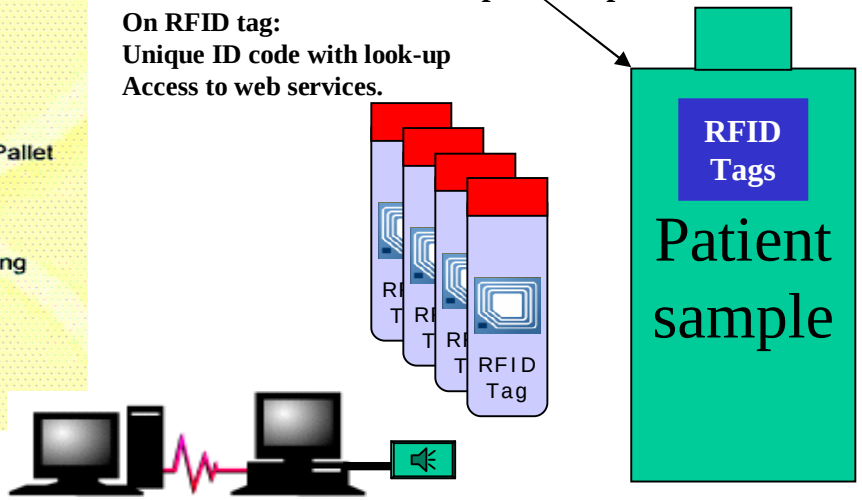
Tagging of analysis sample & logistics



Example for access code-Contents on a RFID tags

1. Identification of patient and data.
2. Access to patient journal.
3. What analysis have to be done.
4. What analysis is necessary.
5. Transport code class 6.2 diagnostic specimens un 3373
6. Classification of Infectious substances un 2814
7. EAK code / faction code / disposal data.
8. Clinical waste code.
9. Mal code information personal protection.

On RFID tag:
Unique ID code with look-up
Access to web services.



dgm SECURITY SOLUTIONS

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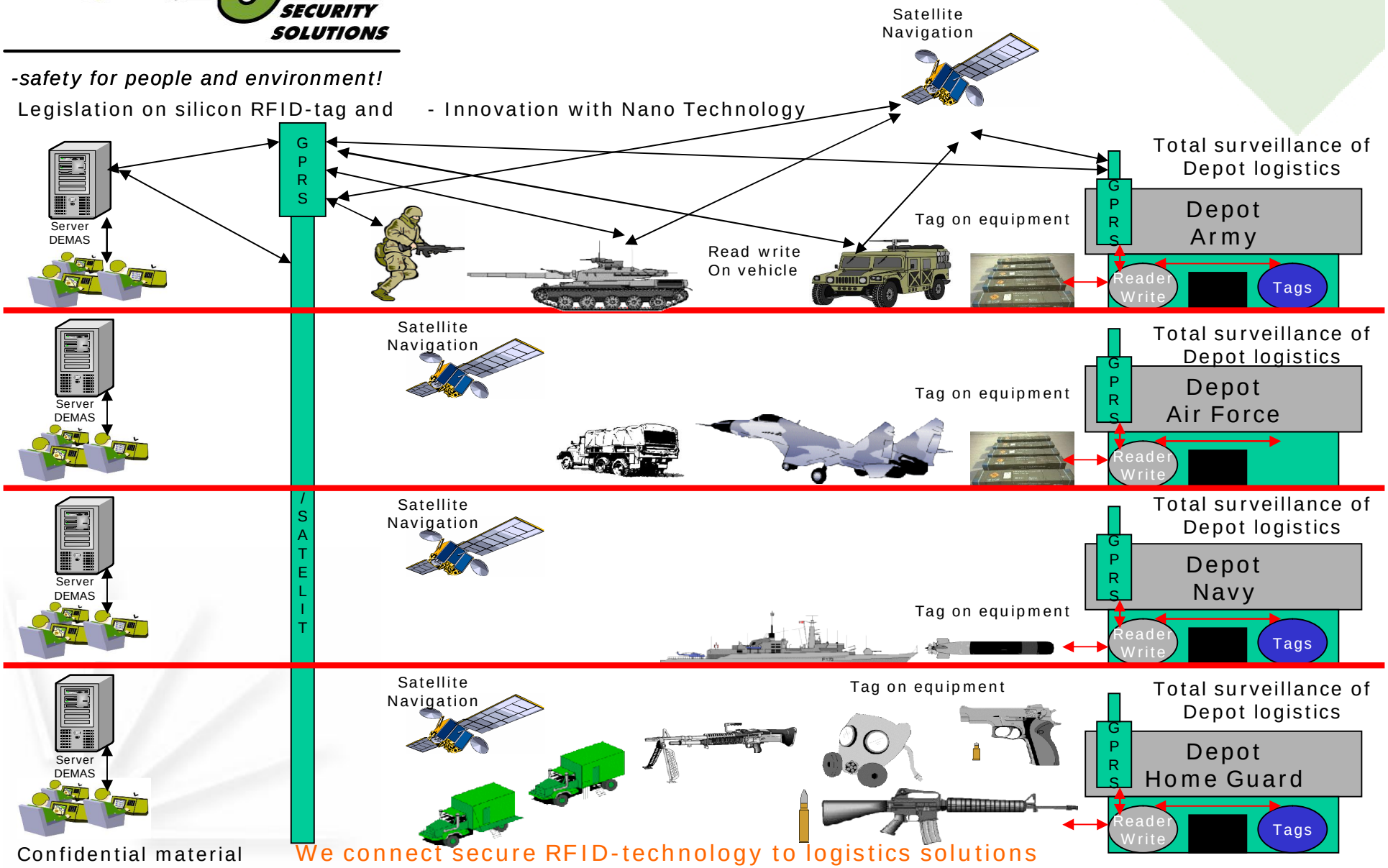

Confidential material

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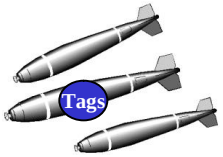
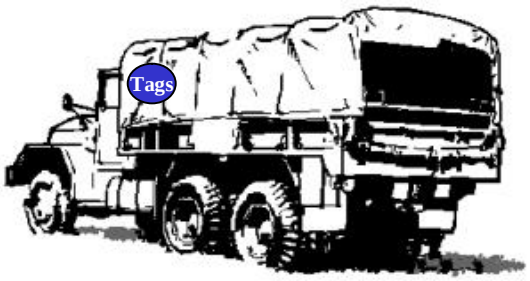
What can the objective be:
To get automatic electronic information about:
1. Changes in depot / to and hand out of equipment.
2. Running inventory/ stocktaking of materials in depot
3. Running information abut which materials are in use.
4. On which locations in the country is the equipment now (in use or in depot)
5. Which equipment is out of country, type, nr. And actual location in real time.
6. What is in reparation.
7. Whish equipment have to go into inspection and or maintenance, where and when.
8. Is the effective validity date for ammunition overrun
9. Whish persons / have whish type of arms and ammunition, weapon serial number:
10. Overview over weapon total for all depots in real time.





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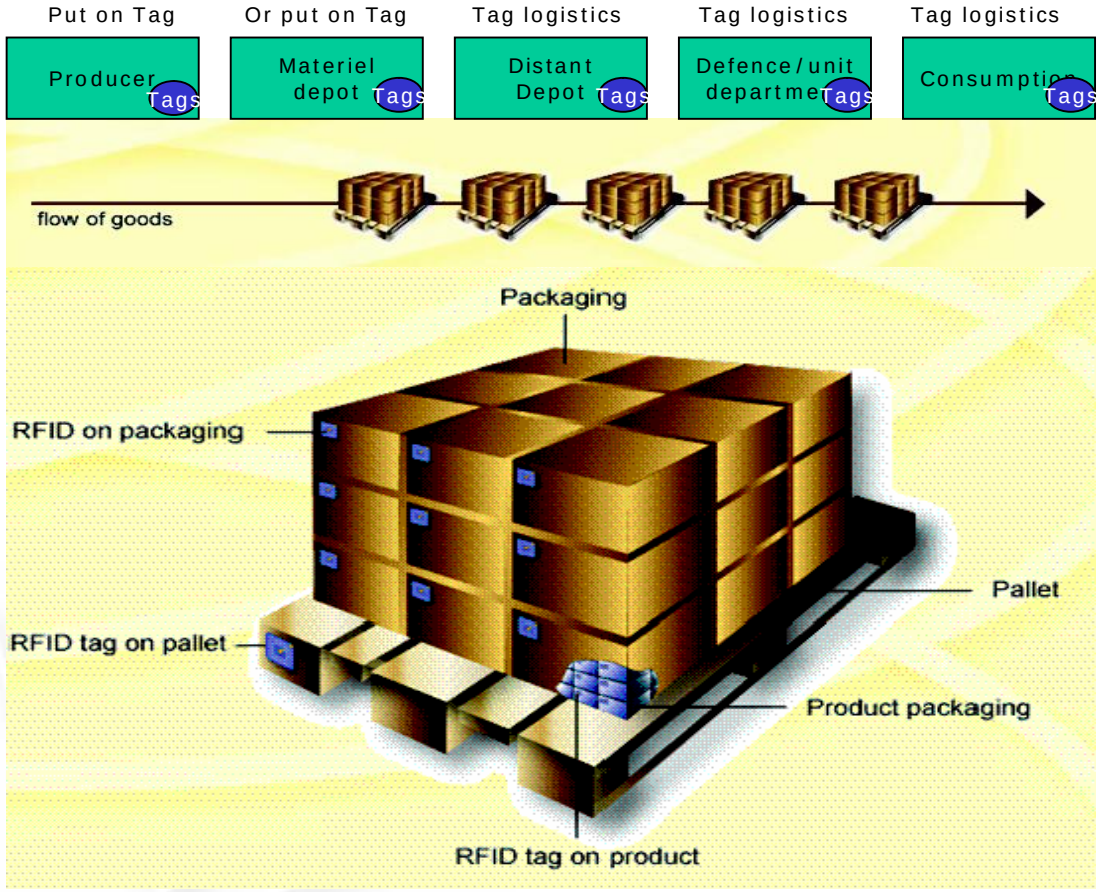
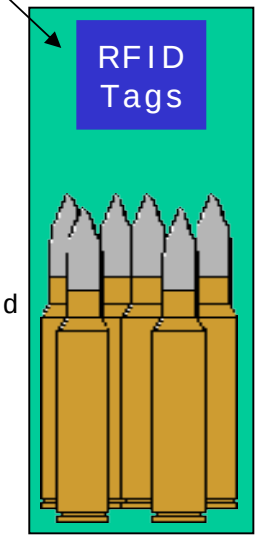


Contents on secure RFID tags

1. Defence own product nr. xxx, Nato data, lot nr.
2. Dangerous goods classifications. UN nr.
   - substance name, PG I,II,II, label.
3. Emergency card DK/SE/NO/OY. or other
4. Ammunition calibre.
5. Productions date.
6. Sell-by date.

Example

Ammunitions Box



The access is done by unique ID with Web services enquirers.

Alternative is to store the information on the tag. Depends Of data amount and transfer speed

We connect secure RFID-technology to logistics solutions

The challenge legislature (parliaments) and thereby the production industries are facing in the coming years is quite comprehensive:

1. That concerns product the authority want to have or be traceable.

2. Adaptation to REACH & GHS directives.
   REACH= Registration, Evaluation, and Authorization of Chemicals.
   GHS= Globally Harmonized System for classification and labelling of chemicals.

3 Counterfeit of products there drain the companies ability to earn money and thereby a lower tax base.

4. Terror safety around dangerous substances. In house but also in transport.

5. Safety for population, both with consideration to food and products.

Secure RFID tag solutions is a unique tool to create security and have control with product we buy, regardless we like it or not.

What about person control?
By using secure RFID, the new owner of the key to the tag is the only one there have access to information from the tag. The tag is in silent mode until correct key access.

But what is going on:
None have until now make any objection about "BroBizz" or other automatic payment systems related to RFID, and this is even not a secure tag.

This open RFID systems registered a person or a company there are registered as user to drive over this bridge. So we can not sneak us over the bridge, "there will be somebody there will know it". Is that privacy?

Even our authority in DK have no **idea** that this registration of citizen happened and still do in a open system. That have in my eyes nothing to do with the legislation, privacy and surveillance society.

Argument now is: "the bill have to be send somewhere"

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Quick summary:

We connect secure RFID-technology to logistics solutions

Security issue with RFID

General information:

The RFID tag is most commonly seen as just an intelligent barcode.

The RFID tag is a computer which can store information.

Access to information has to be controlled !

Security issue with RFID

General information about standard tags

- The RFID tag answers anybody
- The RFID tag can easily be cloned
- Data on a RFID tag can be altered
- Communication between RFID tag and reader can be eavesdropped
- Communication between RFID tag and reader can be recorded and re-played

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Our secure RFID ASIC highlights.

- Secure RFID cryptography tags:
- A RFID tag which can be controlled by the owner
- Secure RFID tags cannot be copied, cloned or spoofed
- Secure RFID tags protects the data on the tag and ensures that no unauthorized party has read, edited, written or deleted data
- Secure RFID tags can operate in silent mode
- Secure RFID tags can provide authentication of the tags.
- The owner can grant 3 rd party access to the tag
- The tag can hold access keys for every stakeholder
- Even on passive tags strong cryptography is embedded
- Communication between reader and tag can not be eavesdropped

Secure RFID & Counterfeit

Secure RFID tags can be used to perform an authenticity check of the RFID tag and hence the product / sample, the tag is attached to

This authenticity check is performed in a way, that ensures that the tag is not cloned, replayed or in other ways compromised

It is even possible to attach a product Certificate or other additional information about the product / sample and this information will also be protected and authenticated

Having an authentication for every product / sample ensures correct handling, hand-over.

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Secure RFID – value added

- Zeroleak Authenticity verification
  - Protection against unauthorized trace
- Sample or product Root Certificate
  - Anti-counterfeiting or cloning and interchangeable prevention
  - Integrated with producers own database and DGM-SDG transport database UN nr. Driven.
  - Free choice of information on tag or online
- RFID-based handover with provable shift of responsibility
  - Strong traceability
  - Decentralized/offline handover
- Multi-key solution – RFID adapt to the situation and context
  - *Producer and Owner, New Owner, Shipper, waste / alarm and others*
- *Privacy Enhancing Design compliance with Data Regulations*

Optional:

One-time-only authorized 3rd party access

- *Emergency situations*
- *Waste disposal*

- *Digitally enhanced product & services*
- *Possibility for Direct Shipment with strong confidentiality*
  - *Preserve buyers / confidentiality*
  - *Crime DNA sample / and other substances (Dangerous Goods confidentiality from terrorist etc. high risk products and terrorism (ADR 1.10)*

Secure RFID adding value

- Our RFID security technology for RFID solutions is opening up for new business opportunities
- "When Security Means Business "
- Not just additional cost!

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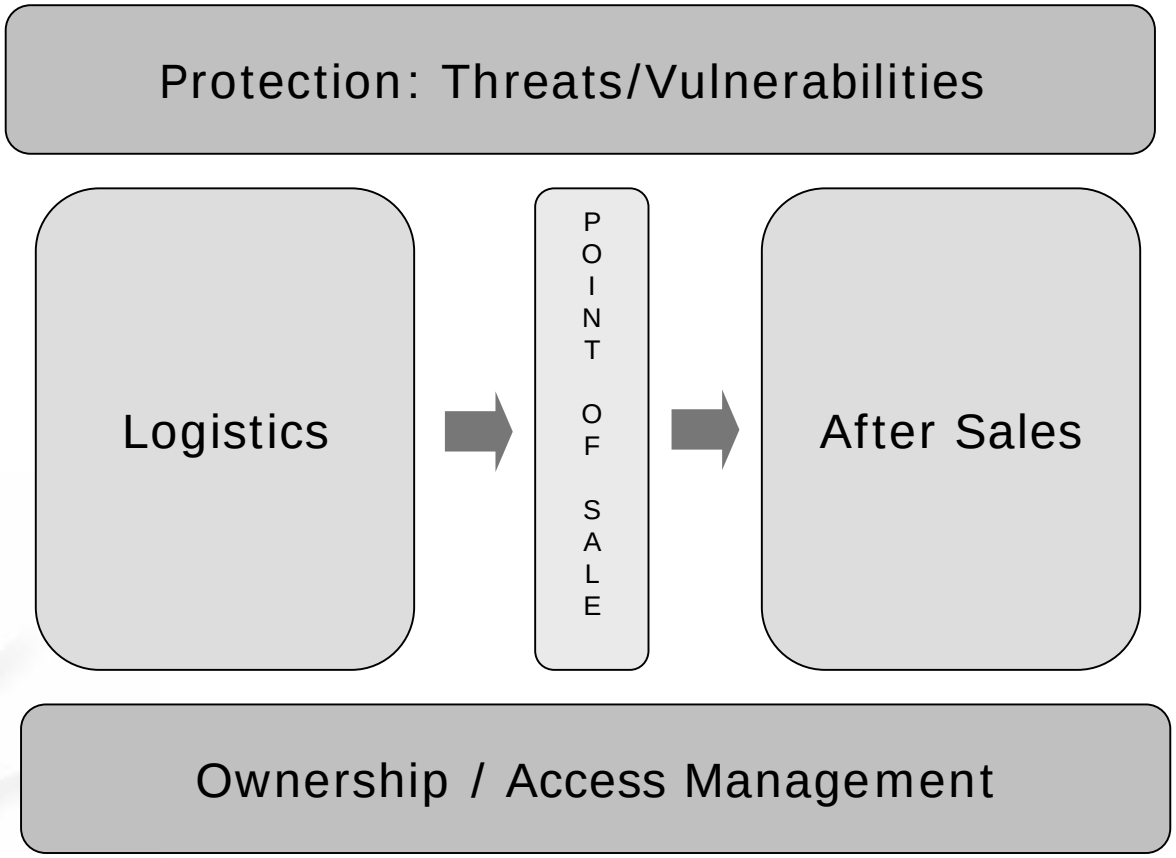
The RFID world



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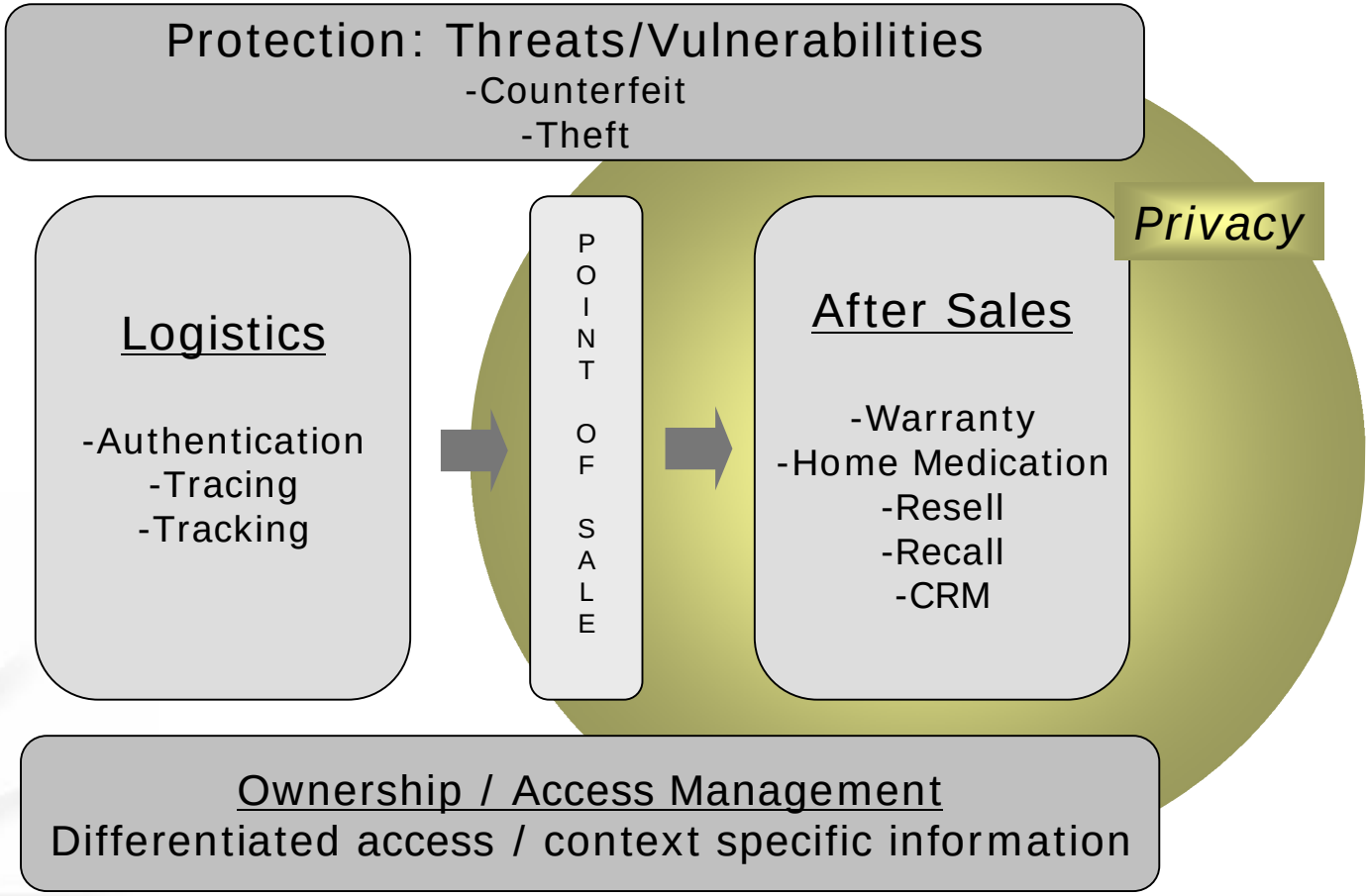
The RFID world



We connect secure RFID-technology to logistics solutions

Data on the tag

- Using our secure RFID tags means the customers has the choice whether data should be on the tag, in a central database, in a local database or a combination.

- Data on the tag means;

  – Ability to work offline
  – Access to instant information on site
  – Maintain product history on the product itself
  – Better performance
  – Ability to meet specific application requirements

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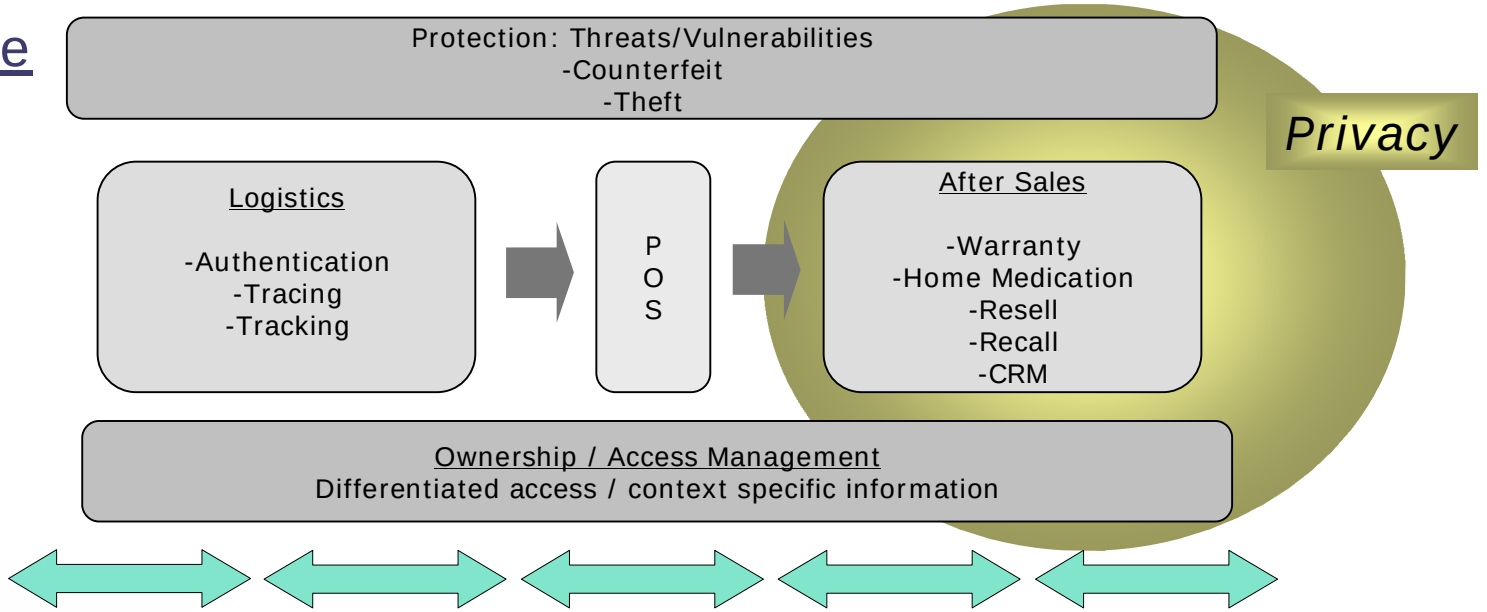
Secure key



Change of key at each point in the supply chain / product life cycle

- *Each player in the supply chain / product life cycle has access to the privileged information only*

Possible for the brand owner to interact directly with the end user

- *The brand owner can provide updated product information, manuals etc.*

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"The way to be safe is never to be secure "
(Benjamin Franklin)

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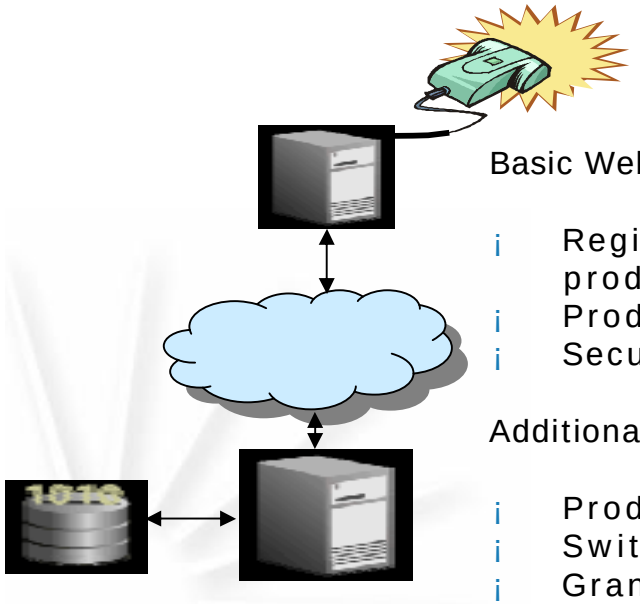
Secure RFID functionality.

Communication between reader and tag can not be eavesdropped



Basic Web services:

- Register new link between tag and product
- Product Originality Check
- Secure links from tag to other data

Additional Web based services:

- Product Certificate
- Switch tag into Silent Mode '
- Grant access to others

Basic Chip functionality:

1. A RFID tag which can be controlled by the owner
2. The owner can switch the tag into Silent mode ', in which case it does not respond at all to any other readers.
3. Even on passive tags strong cryptography is embedded.

Additional Ownership / Access management:

4. The owner can grant 3 rd party access to the tag.
5. The tag can hold access keys for every stakeholder e.g. in supply chain.
6. Information access can be differentiated

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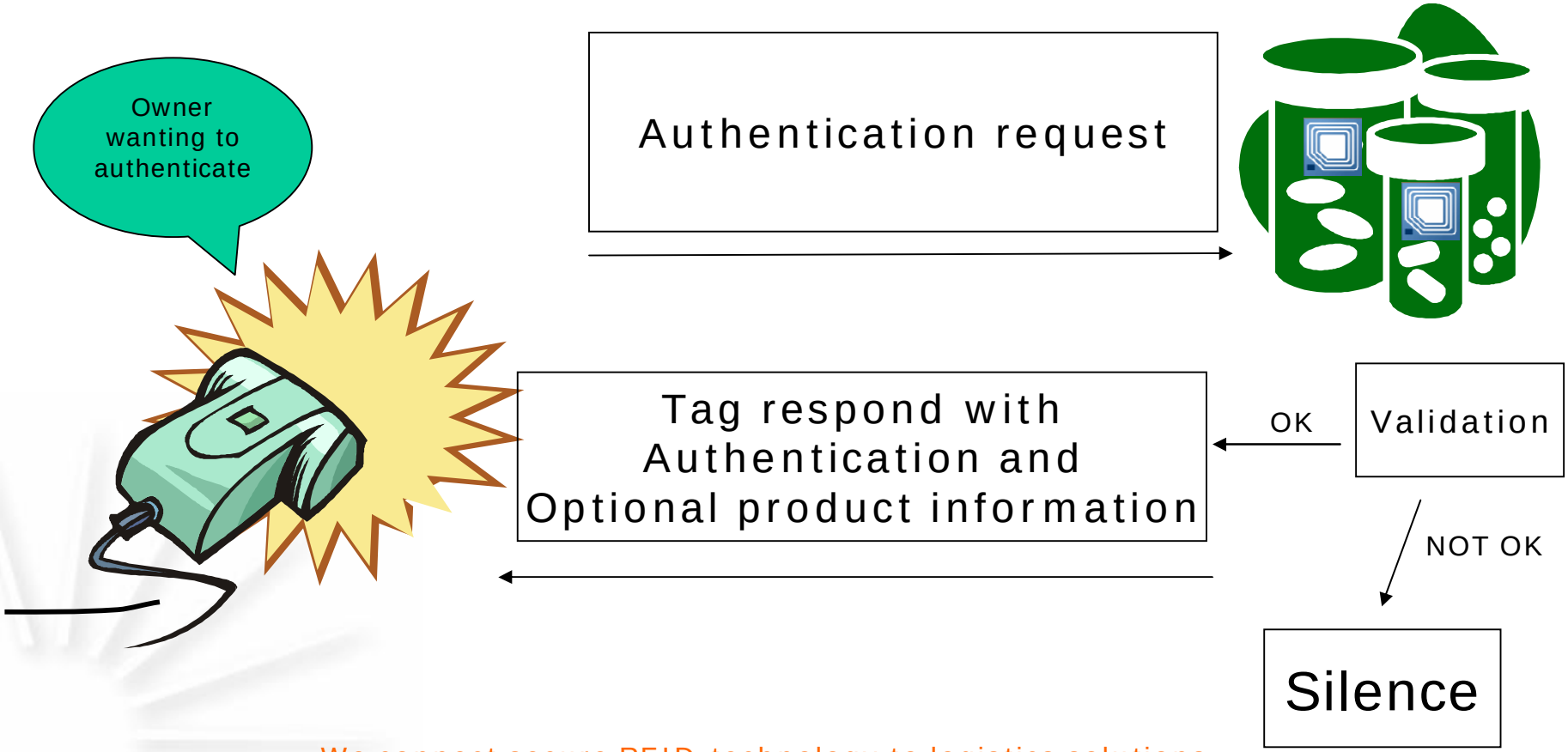
Privacy Mode '- Authentication



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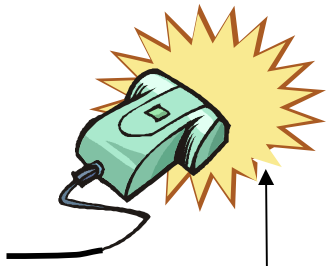
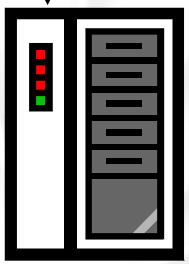
Authentication



1

Owner requests Authentication message

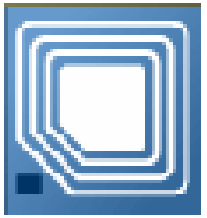


2

Authenticity Message and Product certificate

3 Owner sends authentication message

4 Authentication is successful and product certificate is presented



RFID Tag

4b

Reader authenticates unsuccessfully – the tag remains silent

4c

RFID tag authenticates unsuccessfully – the product certificate cannot be presented

Secure RFID unique features.

- RFID from Supply Chain to Product Life Cycle
- Data on the tag
- Comprehensive and Dynamic Access Management and Control
- Silent
- Brand Owner linked to Access Owner

Questions. ?

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THANK YOU

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