“RFID-Event - 22.10.2010 @Albis Technologies Zürich mit RhB & Siemens

David C. Gürlet, RFIDnet Bern GmbH

Swiss RFID Competence Network

Agenda 22. Oktober 2010 14h - 17h

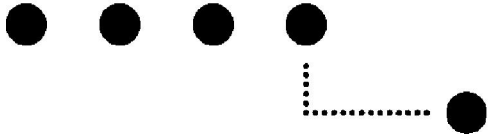
1. Begrüssung bei Albis Technologies AG (10 min.)
   Salvatore Di Pietro CEO Albis Technologies AG
2. RFIDnet im 2010/2011 (10min.)
   David Gürlet CEO RFIDnet Bern GmbH
3. RhB-Ziele & Anforderungen an das Railway Monitoring (25min.)
   Patrik Thoma, Projektleiter Rhätische Bahn AG
4. Siemens als GU der RhB-Lösung (25 min.)
   Rolf Schmid, Siemens Schweiz AG Mobility
5. Technik von Transponder & Reader für Highspeed Tracing (25 min.)
   Zeno Stämmer, Business-Unit Manager Albis Technologies AG
6. Einsatz-Erfahrungen der Rhätischen Bahn AG (25min.)
   Patrik Thoma, Projektleiter Rhätische Bahn AG
7. Apéro mit Networking offeriert von Albis Technologies AG & RFIDnet
8. Ende des RFID-Events ca. 17h

“RFID @ Railways”

David C. Gürlet, RFIDnet Bern Sarl

Swiss RFID Competence Network

Bern University of Applied Sciences



Berner Fachhochschule
Technik und Informatik

tcbe.ch
ICT Cluster Bern, Switzerland

Agenda RFIDnet Bern GmbH

1. RFIDnet Bern GmbH
2. RFID is ….. RFID is NOT !
3. Today's Swiss RFID-Projects @ Railways
   1. SBB
   2. BLS
   3. RhB
4. Tomorrow's potential Swiss RFID-Projects
5. Results from Internat. RFID Congress@Toulouse/Airbus
   1. RFID @ MRO (Maintenance-Repair-Overhaul)
   2. RFID @ AVI (Automatic Vehicle Identification)

1.1 RFIDnet Portfolio

1.2 RFIDnet Consulting

- Swiss Entrypoint for RFID-Questions (Tel.111 for RFID)
- Neutral Consulting for all RFID-Markets & Applications
- Global Market Analyses for RFID-Products & Partners
- Neutral 2nd Opinion Analysis & Mediations
- Elaborating of System Requirement Specs. (SRS)
- RFID Feasibility Studies & Proof-of-Concepts
- RFID Business Checks
  à when is your RFID-Business profitable, if ever?

1.3 RFIDnet Memberships / Links / Partners

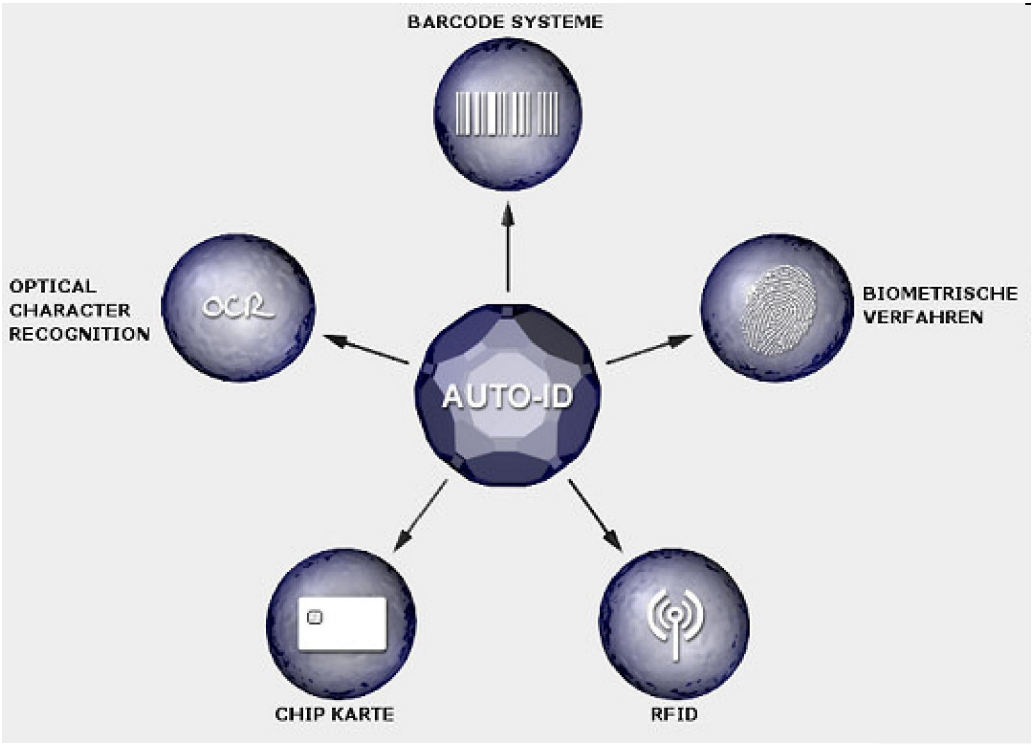
- Berner Fachhochschule TI www.ti.bfh.ch
- ICT Cluster www.tcbe.ch
- Assoc. Member of Race Europe http://www.race-networkrfid.eu/
- Member of SwissTnet RFID-Sektion 51 www.swissT.net
- Member of GS1 Schweiz www.gs1.ch
- Member of CNRFID / France http://www.centrenational-rfid.com/
- Member of Consulting Cluster WBCB http://www.wbcb.ch

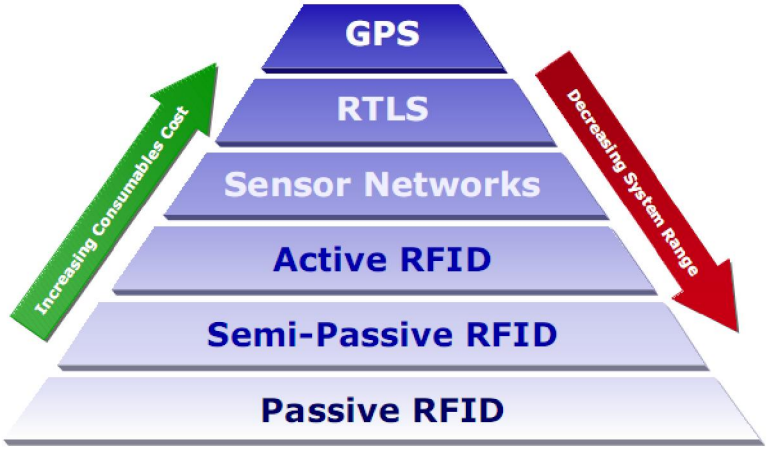
- Links to other international RFID-Organisations (Fraunhofer, EU-Research, AIM Global, etc.)

- Partners: noser engineering, Securiton, Identec Solutions, SOHARD, EHAG

2.1 RFID is : Identification & Positioning

Identification ..... & ..... Localisation (Positioning)





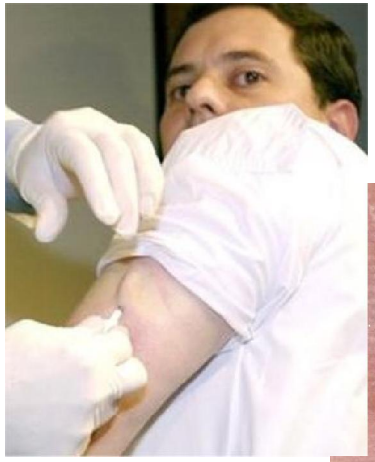
***) missing:**
a. DNA
b. Hand Vene Image

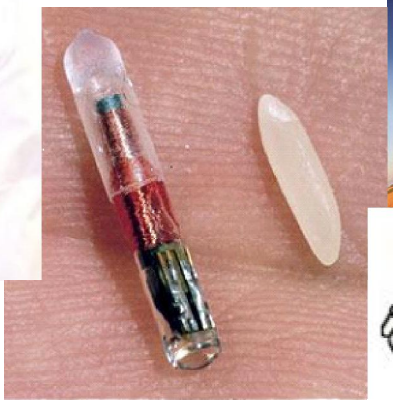
***) Positioning**
a. Indoor RTLS
b. Outdoor GPS/Galileo/Glonas

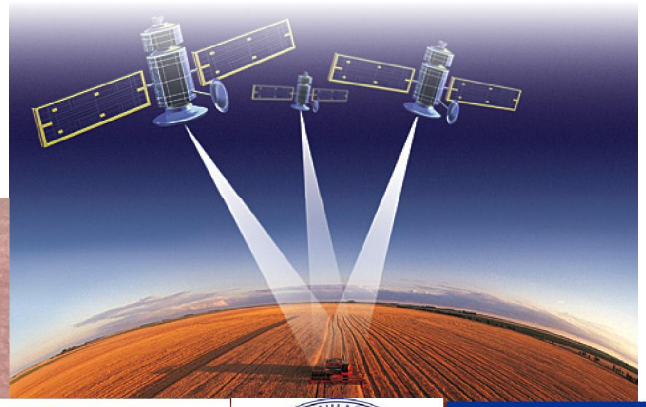
2.2 RFID is NOT :

« RFID is that 2-cents small spy-chip that we can't see, that holds 1'000 encyclopedias of data and that can be tracked by satellite with a precision of a few mm»

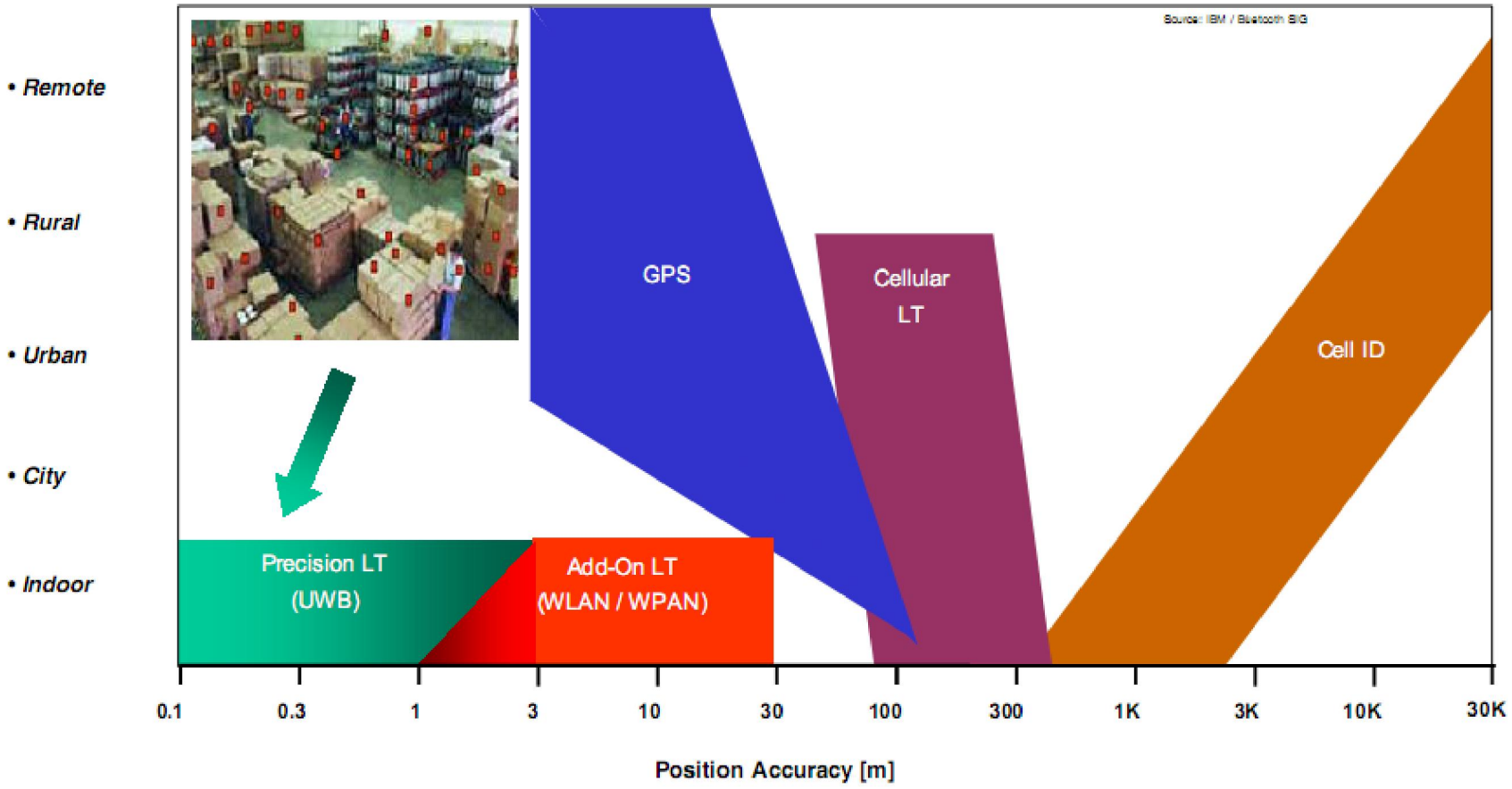
(Citation from customer discussion)







2.3 Accuracy of Localisation (in- & outdoor)



3. Swiss licensed Railways
Total > 500, but 5 Railways with >90% Infrastructure

1. SBB / CFF / FFS
2. BLS – Bern-Lötschberg-Simplon
3. RhB – Rhätische Bahn
4. MGB – Matterhorn-Gotthard-Bahn
5. SOB – Schweizerische Süd-Ost Bahn

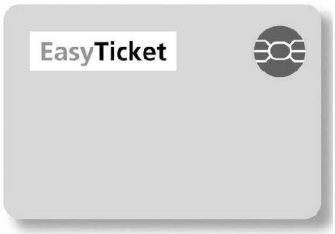
All licensed Railways in Switzerland ..
http://www.bav.admin.ch/dienstleistungen/bewilligungen/00558/00561/index.html?lang=de

3.1 RFID-Projects @ SBB

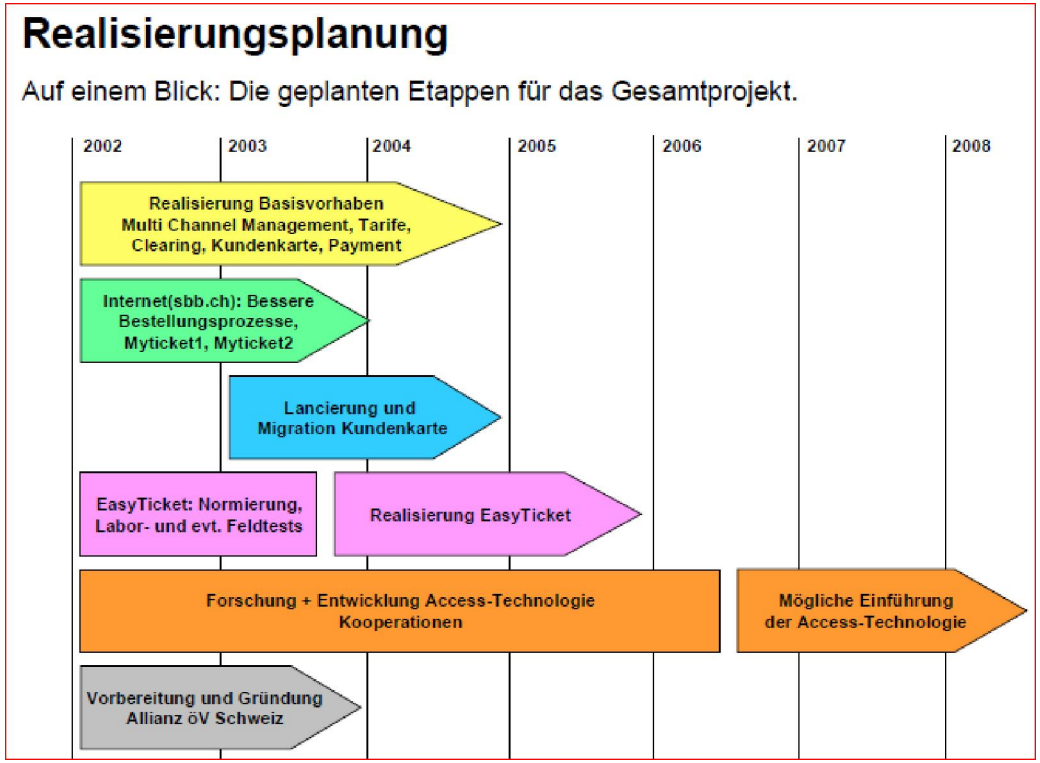
1. EasyRide (2000) – Electronic Ticketing (Pilot OK, Rollout abandonned)
2. SBB – Automatic Wheel ID & Control (passive Tags – Pilot)
3. SBB Cargo – Automatic Vehicle Identification (passive Tags)
4. SBB – AVI – Automat. Vehicle Identification (GPS/GSM-R @ Locomotive & active RFID-Tag @ Wagon)

3.1.1 RFID-Projects @ SBB

EasyRide (2000) – Electronic Ticketing (Pilot OK, Rollout abandonned)



http://mct.sbb.ch/mct/easyride_200204.pdf



3.1.2 RFID-Projects @ SBB

SBB – Automatic Wheel ID & Control (passive Tags – Pilot)

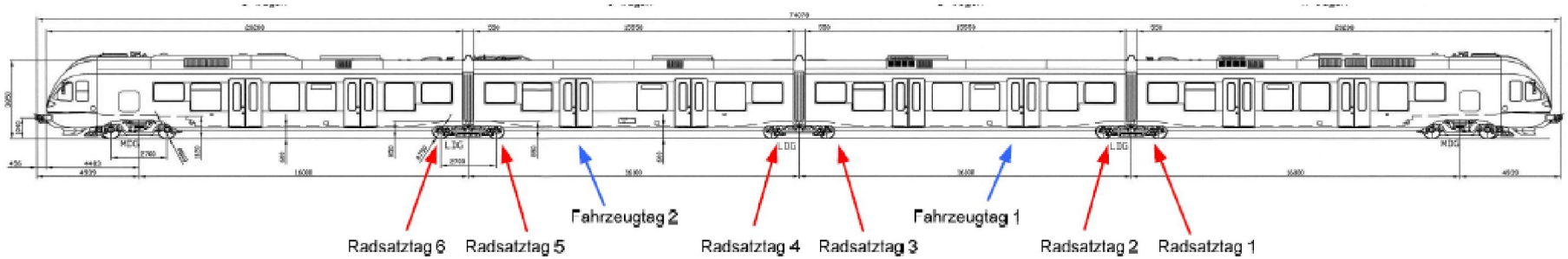
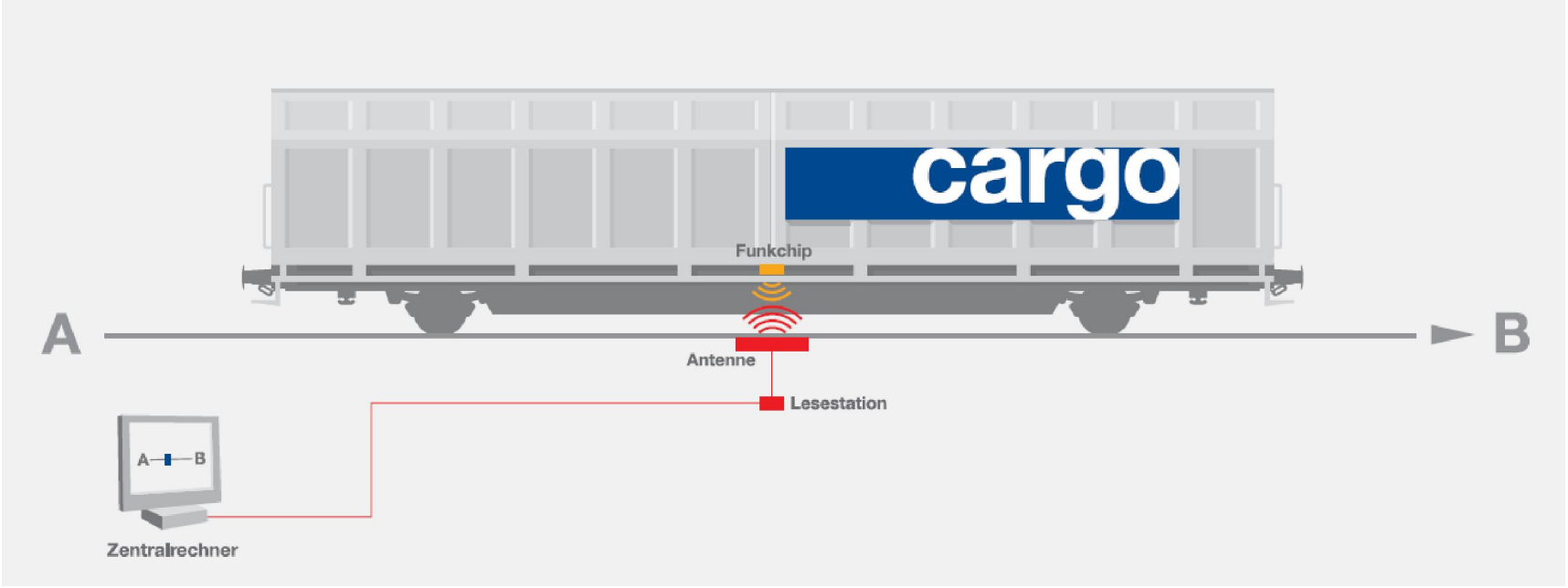


Abbildung 12: Tags am FLIRT

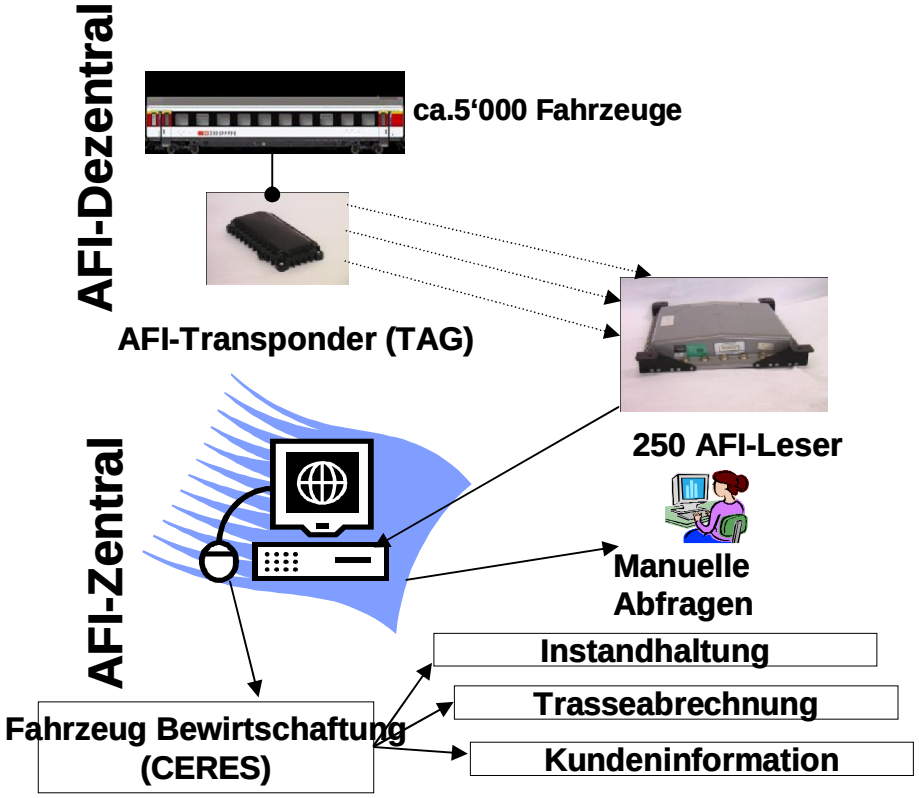
3.1.3 RFID-Projects @ SBB

SBB Cargo – Automatic Vehicle Identification (passive Tags)



3.1.4 RFID-Projects @ SBB

SBB & BLS : AVI – Automat. Vehicle Identification (AFI)



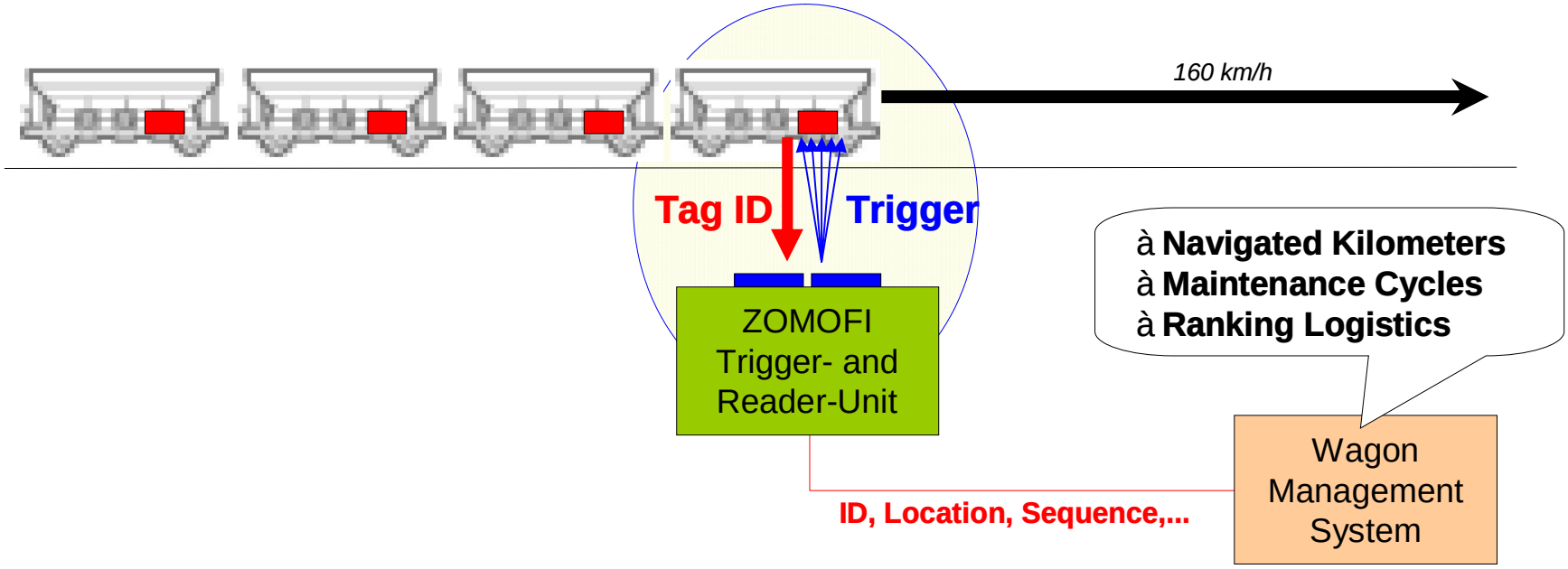
3.2 RFID-Projects @ BLS

BLS – AVI – Automat. Vehicle Identification = AFI SBB

à same as SBB, same Readers on common Tracks

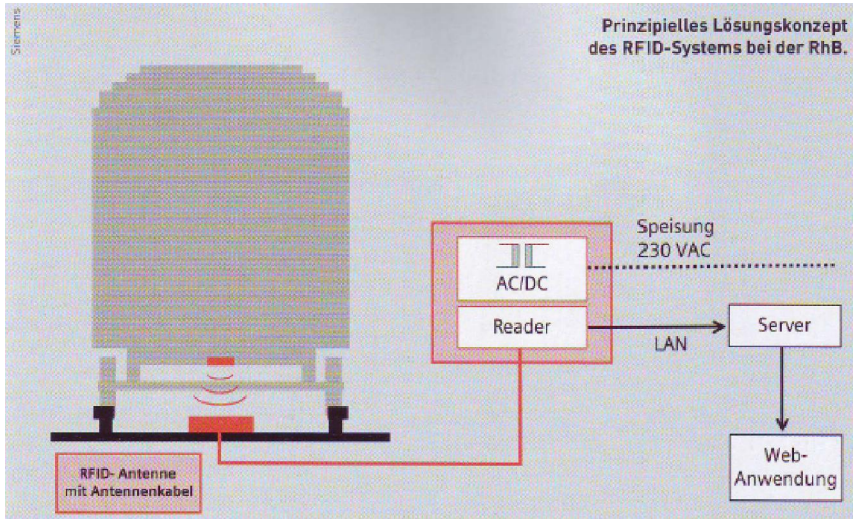
3.3.1 RFID-Projects @ RhB

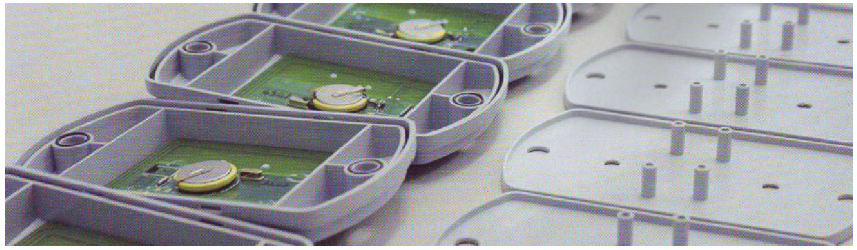
RhB – AVI Automatic Vehicle IDentification (active RFID-Tags)



3.3.2 RFID-Projects @ RhB

RhB – AVI Automatic Vehicle IDentification (active RFID-Tags)



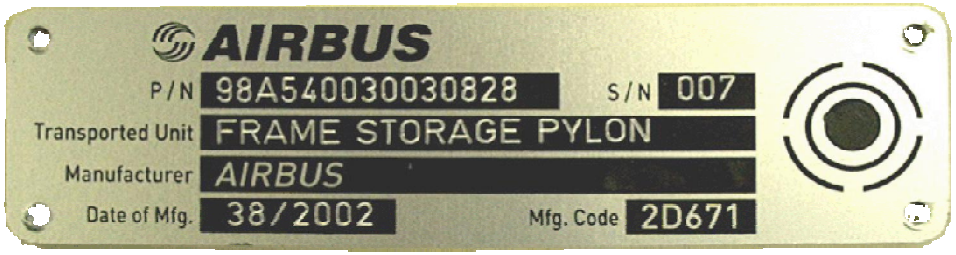


Robust Tag & Reader
Certified for Railway
160km/h
-35ºC

Customer Project at
RhB, Switzerland

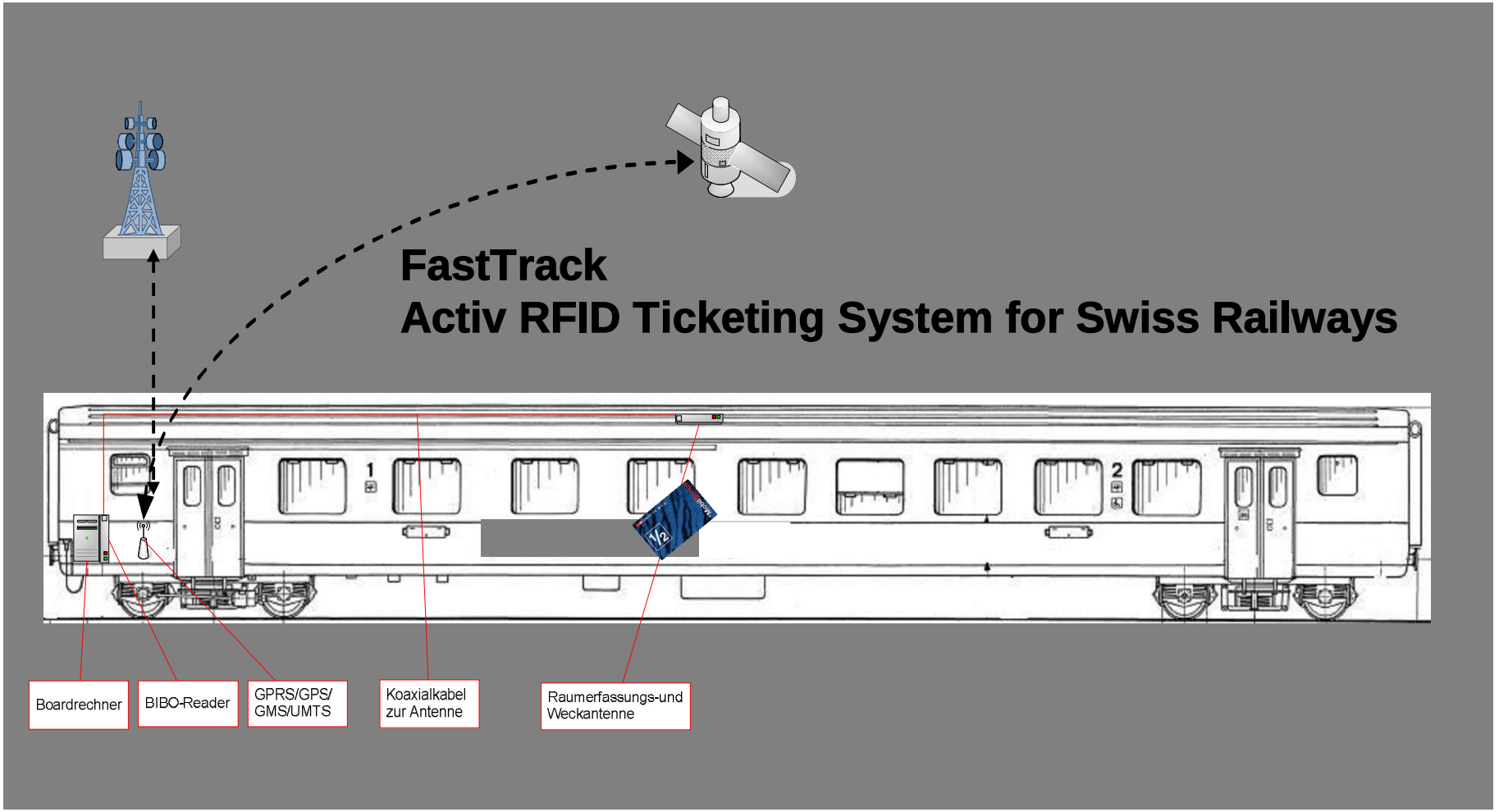
4.1 Future potential RFID-Projects

SBB Personen – MRO-Maintenance Repair Overhaul



4.2 Future potential RFID-Projects

FastTrack – RFID-Ticketing for Swiss Railways from Siemens



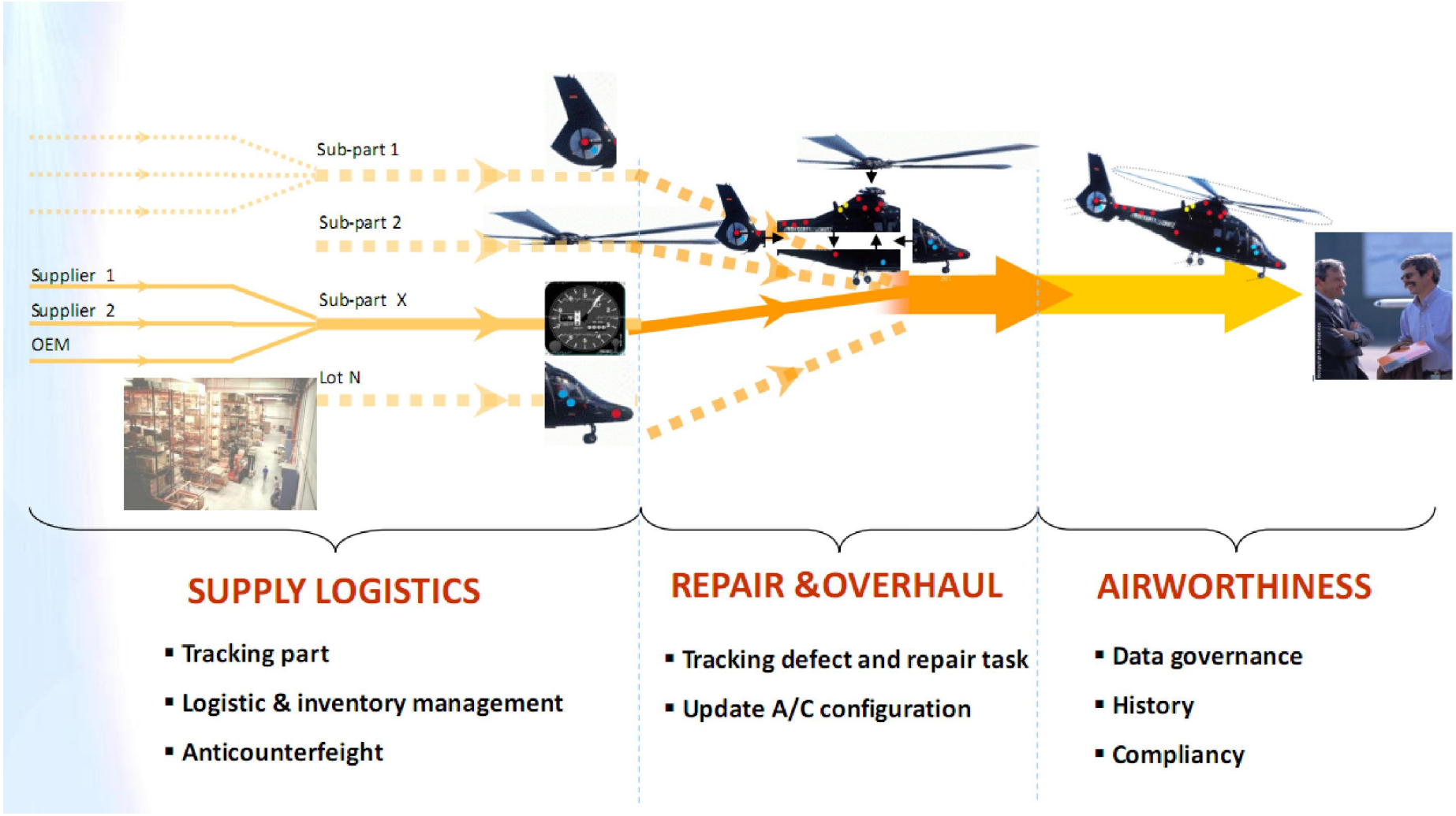
5.1 Results from Toulouse - MRO

1. MRO@Aeronautics =
    1. Technology followows Process = **1. Process Reengineering**
    2. Air IF = ISO18000-6 (UHF EPC Gen2)
    3. Data Standard = ATA2000 Chap.91-5,
    4. Airbus & Eurocopter do it already, 80 SubManufacturers follow

2. MRO@Railways =
    1. Technology follows Processes
    2. Air IF = ISO18000-3 (HF) and ISO18000-6 (UHF)
    3. Data Standard = new European Standard via EU-RACE
    4. SNCF does it already

All Toulouse-Presentations see….http://rfidnet.ch/rfid-events/rfid-expertday-airbus-toulouse---france/index.html

5.1.1 MRO@EUROCOPTER

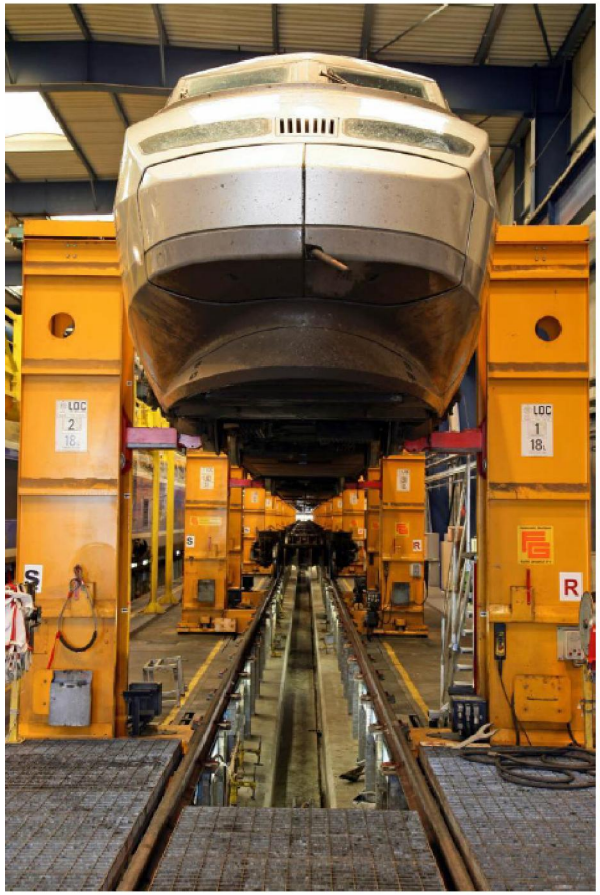


5.2 Results from Toulouse – AVI

3. AVI@Railways =
    1. Technology follows Processes
    2. Air IF = ISO18000-6 (UHF EPC Gen2), if passive RFID
    3. RFID- & Data Standard = new Europ. Standard via EU-RACE
    4. Solution for 300km/h, all wagons
    5. Many Railways with diff. Approaches :
        1. active 2.4Ghz Tag = SBB/SNCF/DB/Hamburger Hochbahn
        2. Active Tag = OeBB (868Mhz), RhB (2.45Ghz)
        3. Passive Tag = Trafikverket, SNCF(2011->), RailOn, SBB-Cargo, etc.

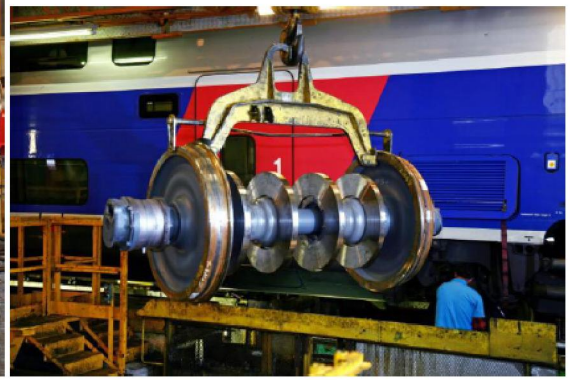
à tomorrow : new EU-Standard for international AVI, based on passive UHF-Tags UHF EPC Gen2 & standard Data

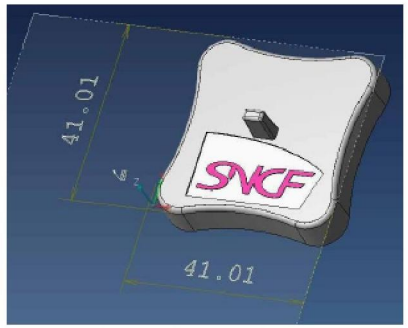
Project TGV Axle Identification



Enlarge the concept elaborated for the freight axle

- Identification in far field (>1.5m) for dynamic reading (low speed : 30 Km/h)
- 2 Tags per axle mounted on boxes
- Base on ISO 180000-6
- Need “vocabulary” standardization





Ongoing RFID projects:

SSAB: Steel billet train Luleå - Borlänge *Active RFID*

SCA: Paper wagons Munksund - Holmsund – *Semi-active RFID*

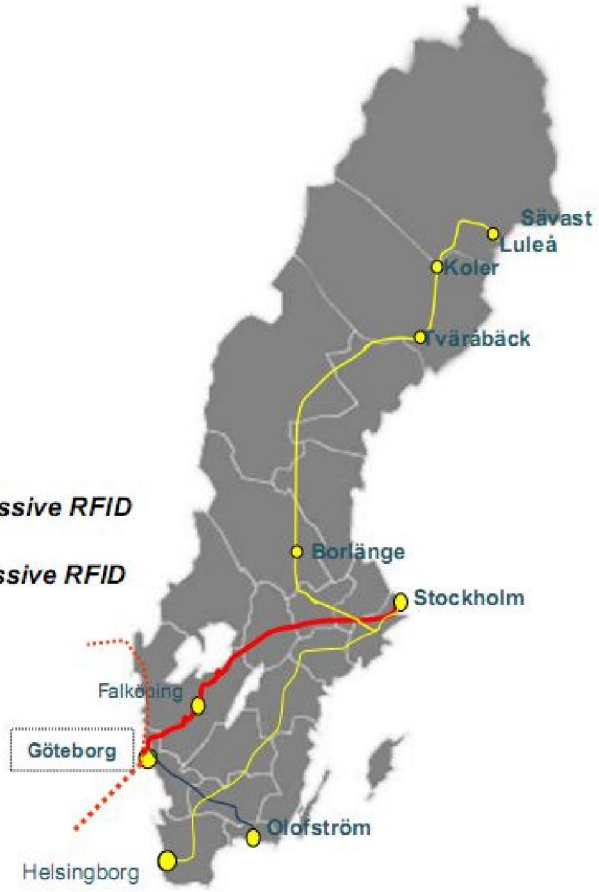
Inland terminal: Falköping - Göteborgs hamn - *Passive RFID*

Posten: Post train Stockholm – Göteborg – *Passive RFID*

Volvo: Train shuttle Olofström – Göteborg – (Gent) - *Passive RFID*

Green Cargo: Intermodal transports Helsingborg – Stockholm – *Passive RFID*

SJ: X2000 "high speed" train Stockholm – Göteborg 200km/h - *Passive RFID*

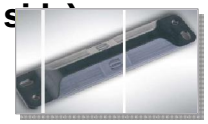


17 2010-09-02 TRAFIKVERKET

Solar.IDpack

Edifret's RFID packaged solution

1 Two RFID tags are installed on each vehicle (one on each s

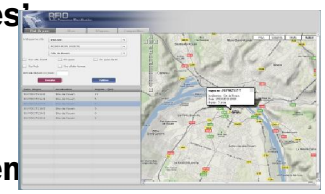


2 A GPRS-communicating, solar power-supplied reader is installed at each entrance/exit of the sites

3 The tag is read and the following information is transmitted to an Edifret-based server

- Tag ID
- Direction
- Hour and date of the reading
- Reader's number

4 A dedicated web application enables the clients to monitor the vehicles' site entrances/exits:



- Real-time monitoring
- Asset dispersion managen
- Entrances/exits history by vehicle
- Entrances/exits history by site
- Train composition

Innovative RFID Solution in accordance with the RFID Alliance's framework

Solar.IDpack

- **Interoperable solution compliant with:**
  - The recommendations of the EIM (European Rail Infrastructure Managers)
  - The framework promoted by the RFID alliance
- **Reliable positioning**
  - Automatic vehicle identification
  - Detection of the vehicle's direction
- **Easy Implementation**
  - Wireless solution
  - Vehicle equipment time < ½ hour
  - Reader post installation time : around 2 hours
- **Cost-efficient solution**
  - Vehicle equipment cost : <15€
  - Vehicle equipment time < ½ h
  - Reader post cost : around 7,000€
  - Reader post installation time : 2 h
  - Open RFID standard (EPC Class 1 Gen 2)
  - Equipment's lifetime: 15 years
- **Environment-friendly solution**
  - Power supply by solar panels

Contact

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