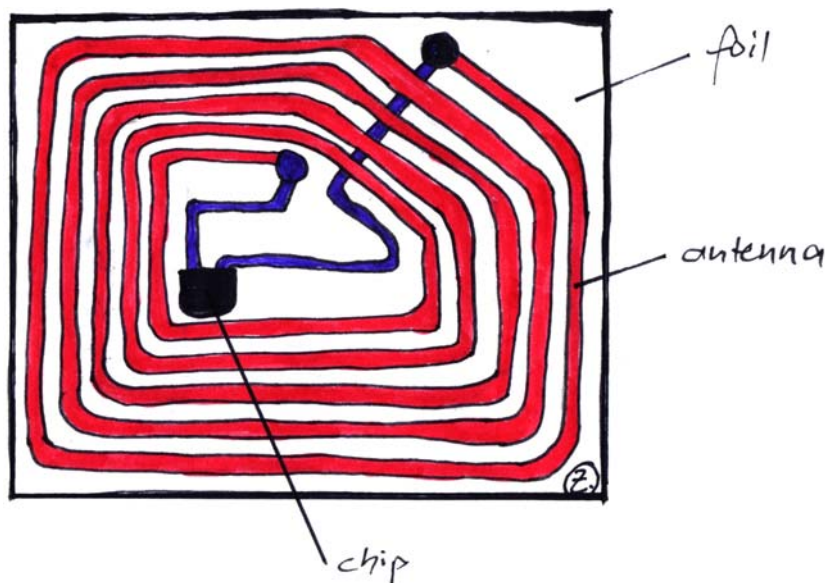


IT-Milestones

RFID-Tags - Blessing or Curse

Shopping Wonderland or Big Brother is watching you



RFID tags are intelligent bar codes that can talk to a networked system to track every product that you put in your shopping trolley.

Shopping in wonderland - no more waiting in the queue

Imagine going shopping on a busy Saturday afternoon.

You have filled your **trolley** up to the top. So have all the others around you.

Getting out of the place as quickly as possible is your biggest wish now. You want to enjoy your weekend with the family.

But, no way, you have to pass the **cashpoint**. And there are hundreds of people waiting in a long queue. They all have to put every single **item** from their trolleys onto the **band-conveyor** at the cashpoint, where everything is registered. They have to put every single item back into their trolleys, and pay their bill, until they can finally leave. Isn't this a real **nightmare**!

Soon, all this waiting and all the **shifting** around with goods could disappear, thanks to the new RFID tags (RFID: short for radio frequency identification).

RFID tags are intelligent **bar codes** that can talk to a networked system to **track** every product that you put in your shopping trolley.

They are smart labels that will enable manufacturers to track their products at all times.

No more queues, no more waiting. Imagine going to the **grocery store**, filling up your trolley and walking right out the door.

These RFID tags will communicate with an electronic reader that will **detect** every item in the cart. The reader will be connected to a large network that will send information on your products to the **retailer** and product **manufacturers**. Your bank will then be **notified** and the amount of the bill will be deducted from your **account**.

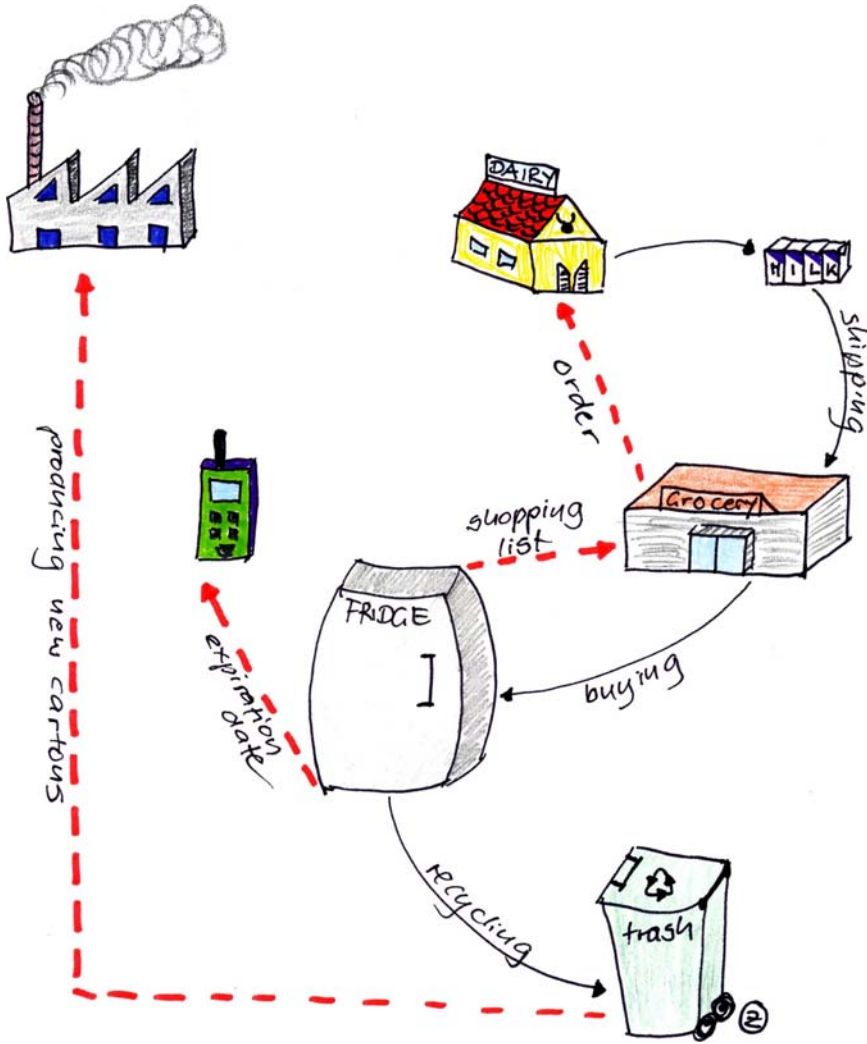
Also, the store's computers know exactly how many of each product that need to be **reordered**.

Once you get home, you put your milk in the **refrigerator**, which is also equipped with a tag reader. This smart refrigerator is capable of tracking all of your groceries stored in it. It can track the foods you use, and can let you know when that milk and other foods **spoil**.

Products are also tracked when they are thrown into a **trash can** or recycle bin. At this point, your refrigerator could add milk to your **grocery list**, or you could program it to order these items automatically.

IT-Milestones

How to track every phase of the supply chain



1. Radio tag placed on carton.	}	Process is monitored through wireless radio communication.
2. Dairy ships carton to grocery store.		
3. Consumer buys tagged carton.		
4. Grocery store can order more cartons at dairy.		
5. Consumer puts carton in refrigerator.		
6. Refrigerator reports expiration date.		
7. Empty carton enters trash can.		
8. Carton manufacturer produces more cartons.		

Words:

supply chain	Versorgungs-Kette
to track	verfolgen
tag	Aufkleber, Etikett
dairy	Molkerei
to ship	transportieren
to monitor	überwachen
fridge	Short for "refrigerator" (Kühlschrank)

IT-Milestones

So much for shopping and Supply Chain Management

But what, if my data get into the wrong hands?

Are these RFID things safe at all?

Exactly this may be strongly doubted.

Here is one critical voice, Jaap-Henk Hoepman¹, a computer scientist from the Netherlands, who has summed up lack of safety aspects for the current RFID system:

Reasons for current RFID systems' lack of safety:

- No authentication
- No friend/foe distinction
- No access control
- No encryption
- Eavesdropping possible

Risks for Consumers

- User profiling
- Possible robbery target
- Loss of location privacy
- Identity theft

Risks:Companies

- Corporate espionage
- Scanning competitors inventory
- Unauthorised access
- Fake RFIDs
- Supply chain failure

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IT-Milestones

What if smart RFID tags are put on my "electronic passport"?

Can any small time criminal steal my identity?

Remember, according to Jaap-Henk Hoepman there is no access control or encryption of data.

Can any private person or institution create a constant profile of my whereabouts, or of my shopping habits?

Jaap-Henk Hoepman: "Loss of location privacy" - "No access control"

Can RFID technology be used for corporate espionage?

According to Jaap-Henk Hoepman: "Yes, it can!"

The US Government Accountability Office's report (May 2005) has also shown that the use of RFID technology has clearly generated substantial controversy.

"Key security issues include protecting the confidentiality, integrity and availability of the data and information systems," the GAO said. "The privacy issues include notifying consumers; tracking an individual's movements; profiling an individual's habits, tastes and predilections; and allowing for secondary uses of information."

Federal agencies are already experimenting with passive RFID technology:

The State Department for Electronic Passports

The Department of Veterans Affairs for "audible prescription reading"

In addition, the Department of Homeland Security is responsible for designing a standardised ID card that could be RFID-outfitted.

There will not be much concern when RFID is used merely to track warehouse pallets.

But when RFID chips are embedded in ID cards or otherwise linked to personal information, the GAO warned, the privacy risks increase dramatically.

"Consumers have raised concerns about whether certain collected data might reveal personal information such as medical predispositions or personal health histories and that the use of this information could result in denial of insurance coverage or employment to the individual," the report said.

IT-Milestones

Vocabulary (page 1):		Vocabulary (pages 3, 4):	
queue	Warteschlange	doubt	bezweifeln
trolley	Einkaufswagen	authentication	Authentifizierung
cashpoint	Kasse (im Supermarkt)	encryption	Verschlüsselung
item	Artikel, Ware	eavesdropping	ausspähen
band-conveyor	Transportband	target	Ziel
nightmare	Albtraum	location	Ort
shifting	hin- und her heben	theft	Diebstahl
bar code	Strichcode	espionage	Spionage
track	verfolgen	inventory	Ausstattung, Inventar, Warensortiment
grocery store	Lebensmittel Laden	whereabouts	Aufenthaltort
detect	feststellen, aufspüren	habit	Gewohnheit
retailer	Einzelhändler	corporate	Firmen-
manufacturer	Hersteller	accountability	Verantwortlichkeit, Haftung
notify	anzeigen, melden	controversy	Streitfrage
account	Konto	issue	Thema
expiration date	Verfallsdatum	confidentiality	Vertraulichkeit, Diskretion
tally	abhaken, nachzählen	integrity	Unversehrtheit
embedded	eingebaut	availability	Verfügbarkeit
purchase	Einkauf	predilections	Vorliebe
deduct	abziehen, abrechnen	audible	hörbar
reorder	nachbestellen	prescription	Rezept
refrigerator	Kühlschrank	outfitted	ausgestattet
spoil	verderben	concern	Bedenken
trash can	Mülleimer	warehouse	Warenlager
grocery list	Einkaufsliste	pallet	Frachtpalette
		raised	aufwerfen, ansprechen
		reveal	enthüllen
		predisposition	Veranlagung
		denial	Ablehnung
		coverage	Deckung (Versicherung)

IT-Milestones

Exercises:

No more waiting in the queue -

Words and terms for going shopping: (Buchstabenpuzzle)

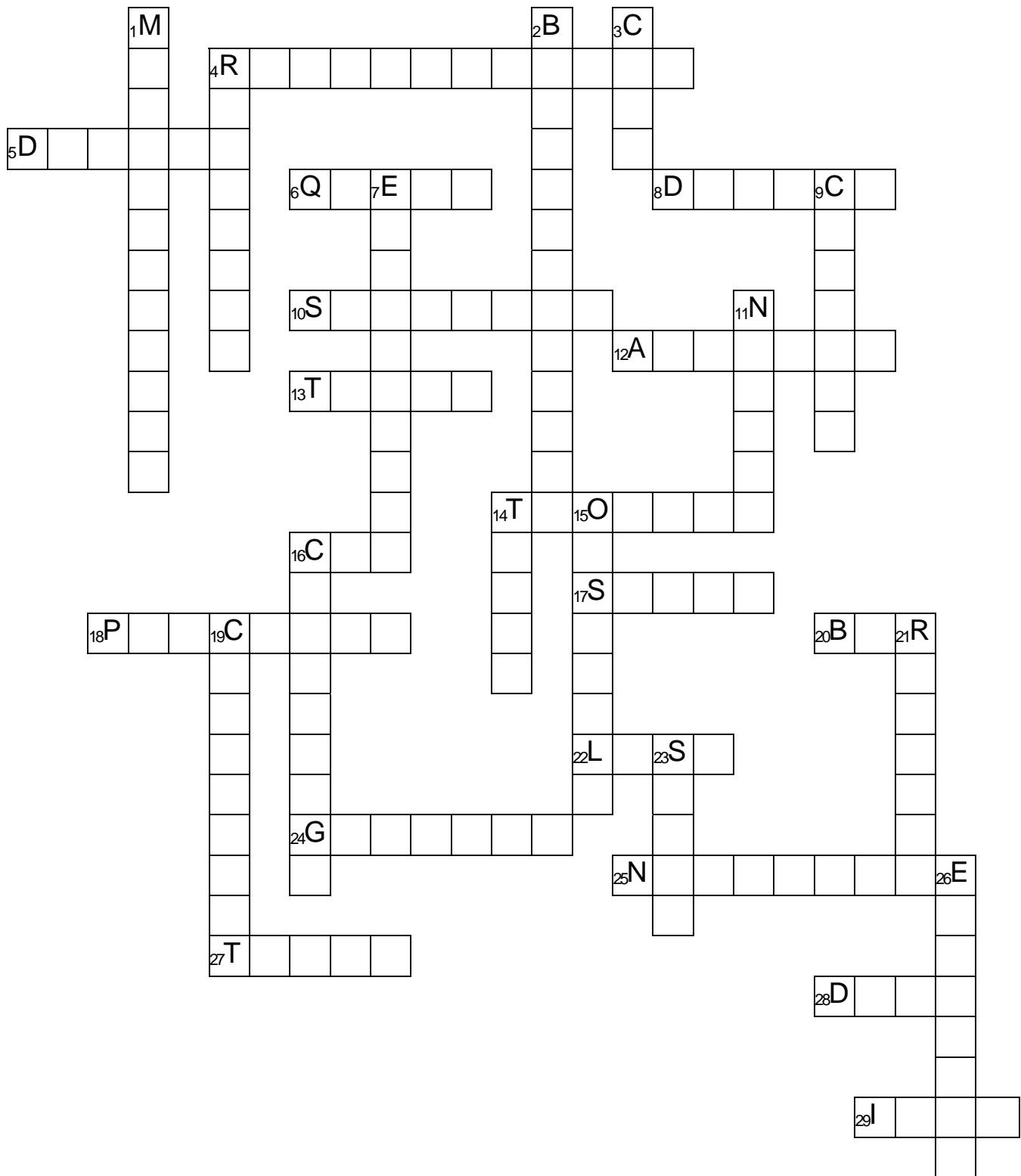
- At home you make a (r r c y e o g) _____ list.
- Before entering the shop you need a (e r l l o t y) _____.
- Collecting the items from the shelves: Mind the (x i n a i o e t p r) _____ date!
- When you get near the (n h a o p c t s i) _____, you have to put all your items on the band-(o v y r n e c e) _____.
- At the cashpoint all the (a b r) _____ codes are (c n e a n d s) _____.
- At home you store most of the goods in the (r r t e g r e r i o a f) _____.
- The packages go to the (r s a t h) _____ can.

Supply Chain Management - Find the correct pairs

(verbinden Sie die korrekten Paarungen)

Aufkleber, Etikett		supply chain
Kurzform: Kühlschrank		track
Molkerei		tag
transportieren		monitor
überwachen		fridge
überwachen		ship
Versorgungs-Kette		dairy

IT-Milestones



IT-Milestones

Waagrecht:

4. Kühlschrank
5. abziehen, abrechnen
6. Warteschlange
8. aufspüren, feststellen
10. hin- und herheben
12. Konto
13. eine Spur) verfolgen
14. Einkaufswagen
16. Dose (amerikanisch)
17. Laden
18. Einkauf / einkaufen
20. Balken / Strich
22. Liste
24. Lebensmittel
25. Albtraum
27. abhaken, nachzählen
28. Datum
29. Artikel (Ware)

Senkrecht:

1. Hersteller
2. Fließband an der Kasse
3. Code, Kennzahl, Schlüssel
4. Einzelhändler
7. Ablauf (Frist)
9. Schrank
11. festhalten, feststellen, notieren
14. Abfall (amerikanisch)
15. Hindernis
16. Herausforderung / herausfordern
19. Kasse
21. nachbestellen
23. verderben
26. eingebaut, eingebettet

IT-Milestones

Wortsuchrätsel:

Reasons for RFID systems' lack of safety:

X	F	S	Z	E	G	N	A	F	E	C	Z	R	A
O	C	C	U	A	H	B	U	A	N	H	J	H	Y
Z	K	H	E	V	E	Q	T	K	C	K	K	S	I
D	Q	F	E	E	P	C	H	E	R	L	X	G	U
I	J	H	X	S	Q	Q	E	L	Y	C	O	S	X
S	E	V	A	D	O	X	N	L	P	R	N	N	M
T	S	J	K	R	H	B	T	G	T	H	E	F	T
I	P	Z	B	O	K	J	I	M	I	E	M	G	Q
N	I	O	E	P	Y	R	C	N	O	K	C	U	L
C	O	T	P	P	V	A	A	F	N	B	C	I	D
T	N	A	N	I	R	O	T	A	R	G	E	T	V
I	A	C	E	N	R	L	I	A	C	C	E	S	S
O	G	J	D	G	S	L	O	C	A	T	I	O	N
N	E	Y	I	N	V	E	N	T	O	R	Y	N	C

In diesem Suchrätsel sind 11 Wörter versteckt.

Die Wörter bedeuten:

- 1) Authentifizierung: _____
- 2) Ausspähen: _____
- 3) Unterscheidung: _____
- 4) Verschlüsselung: _____
- 5) Ausstattung, Inventar: _____
- 6) Spionage: _____
- 7) Ort: _____
- 8) Ziel: _____
- 9) Zugang, Zugriff: _____
- 10) Diebstahl: _____
- 11) Fälschung: _____

IT-Milestones

Government Accountability Office (GAO) Report

Bitte an der richtigen Stelle einsetzen:

embedded | allowing | prescription | tracking | employment | denial | reveal | profiling | integrity | privacy | availability | notifying | Passports | coverage | histories | confidentiality | predispositions | outfitted |

Key security issues include protecting the _____, _____ and _____ of the data and information systems.

The privacy issues include _____ consumers; _____ an individual's movements; _____ an individual's habits, tastes and predilections; and _____ for secondary uses of information."

Federal agencies are already experimenting with passive RFID technology:

The State Department for Electronic _____

The Department of Veterans Affairs for "audible _____ reading"

The Department of Homeland Security is responsible for designing a standardised ID card that could be RFID-_____.

When RFID chips are _____ in ID cards or otherwise linked to personal information, the _____ risks increase dramatically.

Consumers have raised concerns about whether certain collected data might _____ personal information such as medical _____ or personal health _____ and that the use of this information could result in _____ of insurance _____ or _____ to the individual.

IT-Milestones

Lösung - Buchstabenpuzzle Seite 1:

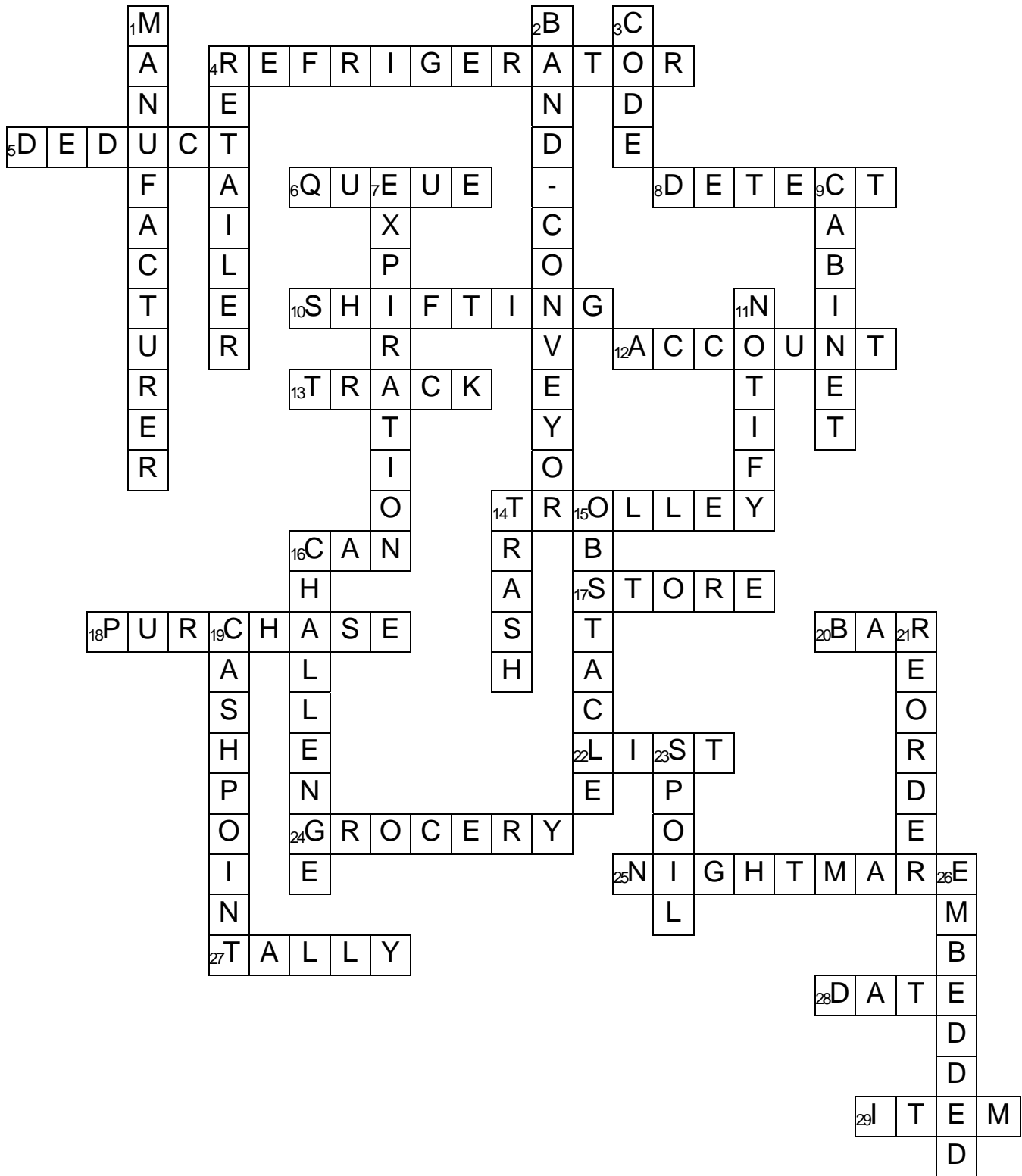
- 1 grocery
- 2 trolley
- 3 expiration
- 4 cashpoint - conveyor
- 5 bar, scanned
- 6 refrigerator
- 7 trash

Lösung: Supply Chain - Correct Pairs:

Aufkleber, Etikett	tag
Molkerei	dairy
Kurzform: Kühlschrank	fridge
transportieren	to ship
überwachen	to track
überwachen	to monitor
Versorgungs-Kette	supply chain

IT-Milestones

Lösung: Kreuzworträtsel



IT-Milestones

Lösung Wortsuchrätsel

RFID systems' lack of safety:

Duplikat ohne Füllbuchstaben:

			E			A	F	E					
			A			U	A	N					
			V			T	K	C					
D			E			H	E	R					
I			S			E		Y					
S	E		D			N		P					
T	S		R			T		T	H	E	F	T	
I	P		O			I		I					
N	I		P			C		O					
C	O		P			A		N					
T	N		I			T	A	R	G	E	T		
I	A		N			I	A	C	C	E	S	S	
O	G		G			L	O	C	A	T	I	O	N
N	E		I	N	V	E	N	T	O	R	Y		

Lösung: Government Accountability Office (GAO) Report

In der richtigen Reihenfolge:

confidentiality | integrity | availability | notifying | tracking | profiling | allowing | Passports | prescription | outfitted | embedded | privacy | reveal | predispositions | histories | denial | coverage | employment |