

IDENTIFICATION AND TRACKING OF RADIOACTIVE PARCELS WITH BAR CODES

G. Mauny

CIS bio international, CEA/Saclay, BP 32, 91192 Gif-sur-Yvette Cédex, France

SUMMARY

Transport in general and transport of radioactive parcels in particular may involve the public in case of accidents.

If the consequences are immediate and serious both for people and for the environment, the impact on the media may be even stronger.

For such reasons, very strict rules have been established with the aim of reducing the risks for such an event occurring and also to control their possible consequences.

Our company reinforced and completed the existing rules so that safer transport and distribution of parcels could be integrated in our organization.

These rules are divided as follows :

- * Safety relies on parcels.
- * The package must be in accordance with the danger of the product it contains.
- * The parcel must be tracked from their departure from the production site to their delivery to the different customers.

INTRODUCTION

For CIS bio international, due to the great number of parcels (\cong 200.000 yearly) and the variety of the isotopes (Thallium 201, Molybdenum 99, Indium 111, Iodine 131, Iridium 192...), it is imperative to obtain the reliability of the transport operations.

The objective to reach a high level is by developing a partnership, that means single operators and also by a faultless identification of the products and the tracking of the parcels.

Identification and tracking are effected by reading bar codes.

The system currently used only in France is named « EXORIS ».

DEVELOPMENT

For CIS bio international, the postulate is that safety is based on the parcels and we are sure that the transport of the products is made in security.

Safety includes all the measures taken to avoid accidents and to limit the consequences for public and for people handling radioactive parcels.

Security is the result research to protect people and environment.

The determination of the packing follow the IAEA recommendations.

To affect a product to a good packaging, it is necessary to identify and to classify this product.

To identify the product, the questions are :

- * What isotope ?
- * What activity ?
- * What physical form (solid, liquid, gazeous) ?

To classify the product :

- * Is it a special form source ?
- * Is it an other source ?

The answer to these questions determines whether the packaging is industrial packing or type A or type B.

The type A and B packages are qualified according to the regulations.

In order to reach a high level of the safety for the transport, CIS bio international develops a partnership and for that, we have selected a very small number of distributors :

- * One for the distribution in Paris and the delivery to the airports.
- * One for the distribution for the rest of French territory.
- * Special and exclusive transports by truck from our production facilities to the different European subsidiaries (Austria, England, Germany, Italy, Spain, Switzerland).

- * A forwarding agent for all air shipments with administrative personnel established on our shipping site.

To assure the tracking and the reliability of the deliveries to the different French customers, CIS bio international has developed a system named « EXORIS ». This system is based on the reading and the comparison of bar codes.

First step, by reading the bar codes placed on the product box, we can identify the product (name, batch number, vial number). The comparison with the bar codes printed on the shipping label allows to realize one parcel.

The parcel is labelled with the name of the customer, the content (isotope, activity.....). These informations are printed in clear and with bar codes. At this moment, we have made the coupling customer/parcel..

The reliability of the delivery is reached by :

- * Identification of the customers (each of them has a bar code).
- * Comparison with the bar code printed on the parcel.

If everything is correct, the machine records the delivery with date and hour.

When the driver has finished, he connects his machine on a central computer and we have the feedback.

CONCLUSION

Identification and tracking of the radioactive parcels allow CIS bio international to be efficient and, in case of an accident, to give quickly all the details about the different parcels loaded on one truck to the safety people.

Currently we are looking for developing this system for the European transports.

EXORIS EXPEDITIONS

THE BAR CODES ON THE METAL BOXE

I-131-S-1-A
NATRIUMJODID 131 J TRINKLÖSUNG

30 mCi 18/11/1997

Zum medizinischen Gebrauch
Trinkbare Lösung
Keine Konservierungsmittel Verschreibungspflichtig
Lagerung bei Raumtemperatur
Bitte vor Gebrauch sorgfältig die Packungsbeilage lesen



Ch-B
Vol.
Kundenreferenz
Versand
Bleibefrist
Verwendbar bis
362,5 MBq/Fiäschchen 01/12/1997 (12 h CET)
370 MBq/ml 01/12/1997 (12 h CET)

: P045 - 83
: 0,98 ml
: 97ETH7622
: 14/11/1997
: 10/10
: 19/12/1997

VIAL NUMBER

BATCH NUMBER

PRODUCT NUMBER

EXORIS EXPEDITIONS

THE BAR CODES ON THE SHIPPING LABEL

CIS bio international



étiquette produit



COLIS 318 0760 01

NOTRE REFERENCE
OUR REFERENCE 97ETH7622

EXPECIE LE
DISPATCHED ON 141197 ROUTE-EXPORT

NOM DU CLIENT
NAME OF CUSTOMER CIS MEDIPRO ZURICH
NUMERO
NUMBER 039E038

TELEX 602431F SACLAY/FRANCE
CUSTOMER SER. 33-1-69-85-71-47
SER. CLIENTS 01-69-85-70-19
COMMANDES 01-69-85-70-00
APPEL EN CAS 01-69-85-74-89
D'INCIDENT 01-69-85-70-10
IPSN/CLT 01-46-38-34-91

ADRESSE / ADDRESS
CIS MEDIPRO AG
C/O SWISSAIR
AEROPORT ZURICH-KLOTEN SUISSE

SUISSE



NBRE	QUANTITE	UNITE	ETIQUETTE	EMG
1	1,110000	GBq	JAUNE II	A
TOTAL	1,110000			

D A S	V CDE	PRODUIT	NUCL	INDICE
76455	MF-1042	I-131-S-1-A	131I	0,50

P13 P045 83

S.A. au capital de 500.000.000 F. filiale de COMPAGNIE ORIS INDUSTRIE S.A. - Siege social SACLAY (ESSONNE) R.N. 308 - B.P. 32 - 91192 GIF-SUR-YVETTE CEDEX FRANCE
R.C.S. CORBEIL-ESSONNES B 321 261 894 - SIRET 312 261 894 00033 - APE 2440 - TELEX 802 431 F

PRODUCT NUMBER

BATCH NUMBER

VIAL NUMBER

CUSTOMER NUMBER

PARCEL NUMBER

EXORIS

