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Introduction

■ How did ESG come to its know-how relating to environmental and hazardous materials topics?

- in-service phase of airborne weapon systems
- in-service phase extends over many years, often decades
 - constantly changes and modifications
 - introduction of new equipments
 - introduction of new POL (petroleum, oils and lubricants) into the supply cycle of the German armed forces
- legale requirements
 - enforce modifications to defence equipment

Introduction

■ **increasing awareness of subjects such as:**

- hazardous materials
- environmental protection
- on-the-job safety
- transportation of dangerous goods

**requirement for information on hazardous materials
which can be evaluated**

Problems in the Provision of Information

- **essential information in computer systems**

- not fully available or not available at all
- scattered and unformatted
- not stored at a central point

- **problems in identifying hazardous materials**

- **effort involved in identifying hazardous materials is enormous**

- **ESG dealing with these problems since 1984**

- **ESG makes computerised systems**

- transparent
- formatted

Environmental hazardous material information systems - ESG -

	Substitution of luminescent paints 1994 - 95
 PATRIOT	Consumables and POL database (PATRIOT) 1992 -
 alle WS	Consumables and POL database for Federal Austrian Army 1994 -
 WS F-4	Substitution of asbestos 1994 - 97
SUBSTANZ	Substitution and standardization of items of supply 1995 -
 MIG-29	Consumables and POL database (MIG-29) 1995 -
 TORNADO	Determination of assemblies containing cadmium 1997 - 99
 PCB	Determination and substitution of capacitors containing PCB 1998
	Studies on subjects dealing with hazardous materials 1999 -

Objectives

- **important objectives learned from our experience, are:**
 - acquisition of information from the beginning of the life cycle of defense equipment
 - in a adequate depth
 - formatted
 - updating of the data over the entire life cycle
 - centralised data management

Significance of information about hazardous materials

■ **information about hazardous materials are important today with regard to subjects such as:**

- on-the-job safety
- transportation of dangerous goods
- protection of the environment
- reusability of systems and equipment
- disposal

legal situation demands this information

Acquisition of Information in Adequate Depth

- **acquisition of information of hazardous materials from a present-day point of view**
 - acquisition of hazardous consumable and POL
 - mostly properly documented (safety data sheets)
 - acquisition of other hazardous materials
 - eg. documented in form of special authorisation

Acquisition of Information in Adequate Depth

- acquisition of information of materials which have *not been hazardous materials* so far but which have *become hazardous* as a result of a change in the law
 - eg. asbestos, CFC, PCB, (cadmium)
- options of determination of these items
 - acquisition of information relating to
 - material
 - constituents
 - compounds
 - surface treatment



Data Management in Centralised Logistic Information Systems

- **centralised logistic information systems**
 - GAF: ILIMS (Integrated Logistic Information and Management System)
 - RAF: ISIS (Item of Supply Information System)
 - USAF: FLIS (Federal Logistics Information System)

- **possibility of acquiring and mapping information about**
 - hazardous materials
 - characteristics data of items of supply (eg. material, compounds, surface treatment)


- **NATO-compatible systems**

Codification

- **information and data contained in NATO-compatible systems (eg. ILIMS) acquired as part of the *codification process***
- **items of supply which have been introduced into the supply cycle have to be coded**
- **beginning of the life cycle of defence material**
- **codification is an excellent opportunity to acquire information required for identifying hazardous materials**

Codification

■ codification process

- acquisition of the name of the item of supply, the material category and manufacturer's information
- acquisition of the characteristics data such as properties and hazardous characteristics 
- assignment of the NATO stock number

■ performed by the same method in all NATO countries

Characteristics Data

■ identification guides

- characteristics data acquired by answering questions, “feature questions”
- “feature questions” specified in identification guides
- identification guides for screws describing a screw in greater detail
 - item name
 - thread, right-hand/left-hand
 - length
 - type of screw head
 - eg. countersunk
 - material
 - surface treatment
 - etc.

Problems with Identification

- **identification of material which have now become hazardous materials as a result of a change in the law**
 - not all questions listed in identification guides have to be answered
 - certain details which would be necessary for determining materials which become hazardous are not available
 - all feature questions relating specifically these materials have to be answered as part of the codification process

Examples of Characteristics Data for Evaluation

Characteristics Data Response for NSN 5330-00-579-7838		FOUO
Today's Date: 06 Apr 00		Effective Date: 1 Jan 2000
Item Name: GASKET		FLIS
MEC	Requirement Statement	Clear Text Reply
NAME	ITEM NAME	GASKET
AAGR	CROSS-SECTIONAL SHAPE STYLE	FIL METAL AND NONMETALLIC MATERIALS
ABKV	OUTSIDE DIAMETER	1.328 INCHES NOMINAL
ABVL	APERTURE DIAMETER	1.000 INCHES NOMINAL
ADVM	CROSS-SECTIONAL THICKNESS	0.080 INCHES NOMINAL
MATT	MATERIAL	COPPER OVERALL AND ASBESTOS
STYL	STYLE DESIGNATOR	B1 CIRCULAR
ZZZV	FSC APPLICATION DATA	ENGINE,GASOLINE,RECIPROCATING,AIRCRAFT

Examples of Characteristics Data for Evaluation

Characteristics Data Response for NSN 5305-00-045-3179 FOUO

Today's Date: 05 Apr 00 Effective Date: 1 Jan 2000
 Item Name: SCREW/MACHINE FUS

MRC	Requirement Statement	Clear Text Reply
NAME	ITEM NAME	SCREW/MACHINE
AAJD	THREAD CLASS	3A
AAJF	THREAD DIRECTION	RIGHT-HAND
AASA	THREAD LENGTH	0.460 INCHES MINIMUM
AASB	FASTENER LENGTH	0.969 INCHES NOMINAL
AASK	HEAD STYLE	A39 FLAT COUNTERSUNK
AASL	HEAD DIAMETER	0.447 INCHES MINIMUM AND 0.507 INCHES MAXIMUM
ABQZ	INTERNAL DRIVE STYLE	B1 CROSS RECESS TYPE 1
AMVM	NOMINAL THREAD DIAMETER	0.250 INCHES
CNLP	THREAD QUANTITY PER INCH	28
CQBC	MINIMUM TENSILE STRENGTH	125000 POUNDS PER SQUARE INCH
CQFM	HARDNESS RATING	50.0 ROCKWELL C MINIMUM AND 56.0 ROCKWELL C MAXIMUM
CRSQ	COUNTERSINK ANGLE	99.0 DEGREES MINIMUM AND 101.0 DEGREES MAXIMUM
CYAU	SCREW MATERIAL	STEEL
CYBA	SCREW SURFACE TREATMENT	<u>CADMIUM</u>
TRSD	THREAD SERIES DESIGNATOR	UNF

Examples of Characteristics Data for Evaluation

Characteristics Data Response for NSN 5910 00 972 3200 FD00

Issue/Date: 06 Apr 00 Effective Date: 1 Jan 2000

Item Name: CAPACITOR, FIXED, PAPER DIELECTRIC F.15

NSN	Requirement Statement	Class. Text Reply
BARL	TYPE NAME	CAPACITOR, FIXED, PAPER DIELECTRIC
AAQ1	FOOT STYLE	14A W/9 HTO FACILITIES, TERMINAL (3) ON ONE SURFACE
AA9G	RELIABILITY INDICATOR	NOT ESTABLISHED
ABHD	OVERALL LENGTH	2.500 INCHES NOMINAL
ABHT	OVERALL HEIGHT	1.187 INCHES NOMINAL
ABHE	OVERALL WIDTH	1.188 INCHES NOMINAL
ADW0	FOOT LENGTH	2.500 INCHES NOMINAL
ADW7	FOOT WIDTH	1.188 INCHES NOMINAL
ADW9	FOOT HEIGHT	4.790 INCHES NOMINAL
AFRT	CENTER TO CENTER DISTANCE	1.338 INCHES NOMINAL AND
CRTP	TOLERANCE RANGE PER SECTION	-15.00/10.00 PERCENT SINGLE SECTION
CW6E	CAST MATERIAL	METAL
CW6K	INSULATION RESISTANCE AT REFERENCE TEMP	1500.0 RESOHM-ML/STANDARD
CW6D	DISSIPATION FACTOR AT REFERENCE TEMP IN PERCENT	1.0000
FKAT	SPECIAL FEATURES	INCLUDES SUBSTANCE CONTAINING PCB (3.5 PPM)
TEST	TEST DATA DOCUMENT	Q1049-MIL-C-25 SPECIFICATION
TTVY	TERMINAL TYPE AND QUANTITY	2 THREADED STUD

“N-CORE“ Codification Tool

- **codification process is complex regarding the different sequences**

- **ESG developed a computer program which maps all the codification processes, it's called N-CORE**
 - supports all the functions which are expected of a NATO codification bureau

 - supports the user in particular with the identification and codification of items of supply

Summary

- **acquisition of information of defense material at the beginning of the life cycle**
 - codification process

- **updating of the data over the entire life cycle**

- **centralised data management**

legal situation demands information on hazardous materials