

News on TUIS and ICE

**5th International Conference for Fire Brigades in the Oil
and Chemical Industry
17. – 18. November 2009**

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VCI



Transport- Accident- Information- and Emergency- Response-System



VCI



The TUIS-System

Foundation in 1982 in Germany

Voluntary Assistance Program of the Chemical Industry Association (VCI) in Germany

Agreements between VCI and Minister of Interior in 11 German Countries to ensure assistance during transportation emergency

TUIS → Transport-Accident-Information and Technical-Support-System

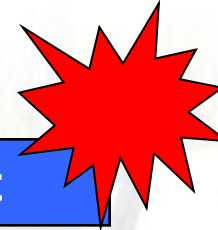
Part of the global Responsible Care® Initiative

„The Responsibility of the Chemical Industry doesn't stop at the gateway of the plant“

TUIS Emergency Call System



Scene of accident



Authorized public authority
(e.g. police, public fire brigade)

TUIS member company as included in the list of companies, e.g.

- a company near the site of accident
- a manufacturer

Emergency call centers
Telephone exchange within

- the Federal Republic of Germany
- Europe

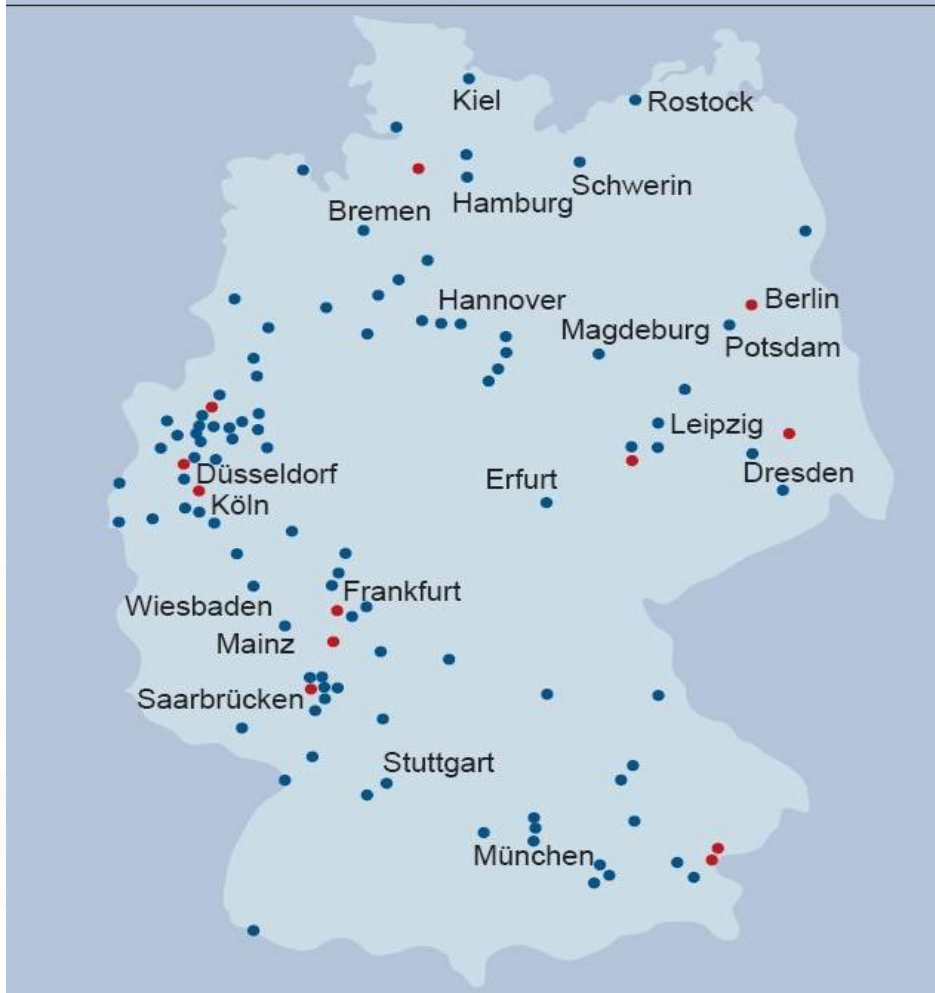
Level 1 Advice given by phone

Level 2 Expert Advice on the scene

Level 3 Technical Assistance on the scene

Sites of TUIS member companies (130)

Standorte der TUIS-Mitgliedsfirmen



TUIS- Emergency Centers (12)

BASF AG, Ludwigshafen (NRC)

BASF Schwarzheide GmbH

Bayer Industry Services, Leverkusen

Dow Deutschland, Stade

Henkel KGaA, Düsseldorf

Infracor, Marl

InfraLeuna GmbH, Leuna

InfraServ, Gendorf

Infraserv, Frankfurt

Merck KGaA, Darmstadt

Schering AG, Berlin

Wacker Chemie AG, Burghausen

Level 1 - Advice given by phone

Consultation in local language given by the Technical Officer of the companies fire department in case of incidents and accidents involving hazardous materials during transportation (rail, road, waterway), in production facilities or warehouses, depending on

- Special Situation on the scene
- Weather conditions on the scene
- Location, Neighborhood

Form of Information

- Characteristics / Hazard / Impact
- Address of the producer
- Tactical advices to the Incident Commander on the scene
- Waste disposal treatment
- Recommended technical equipment and personal protection



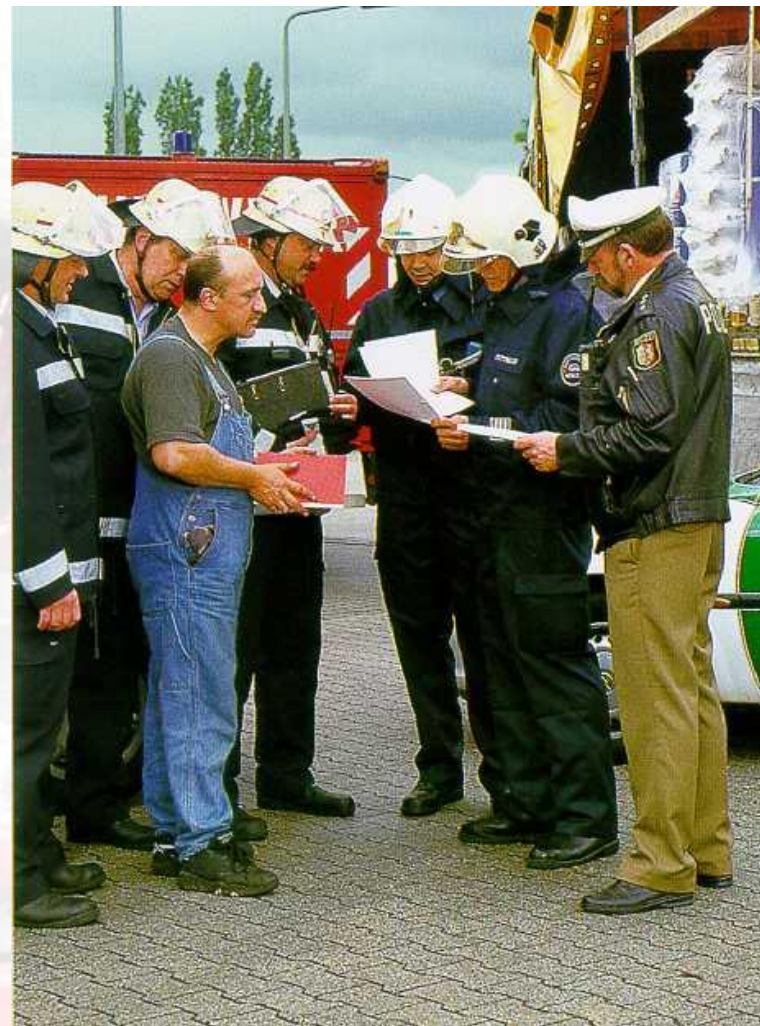
Level 2 - Advice given on the scene

Advice given on the scene in difficult situations e.g.

- Unknown product or not enough information about the product
- Unknown producer
- Persons with less experience in managing incidents with hazardous materials

Possible supporting experts:

- Technical Officer of the companies fire department
- Chemist
- Master craftsman of the production plant
- Specialists (Environment, Engineering, ...)



Level 3 - Technical assistance given on the scene

Situation on the scene:

- Large accident / incident
- No suitable technical equipment
- Special operations necessary

Form of Support:

- Special technical equipment
- Salvage tanks
- Special knowledge in handling hazardous materials / managing the incident
- Technical Officer of the companies fire department
- Operational Units of the company
- Chemist / Specialist (Environment, ...)
- Master craftsman of the production plant



Costs

Level 1

Free of charge

Level 2

Reimburse insurance company of the party who was responsible for the incident / accident

→ Experts

Level 3

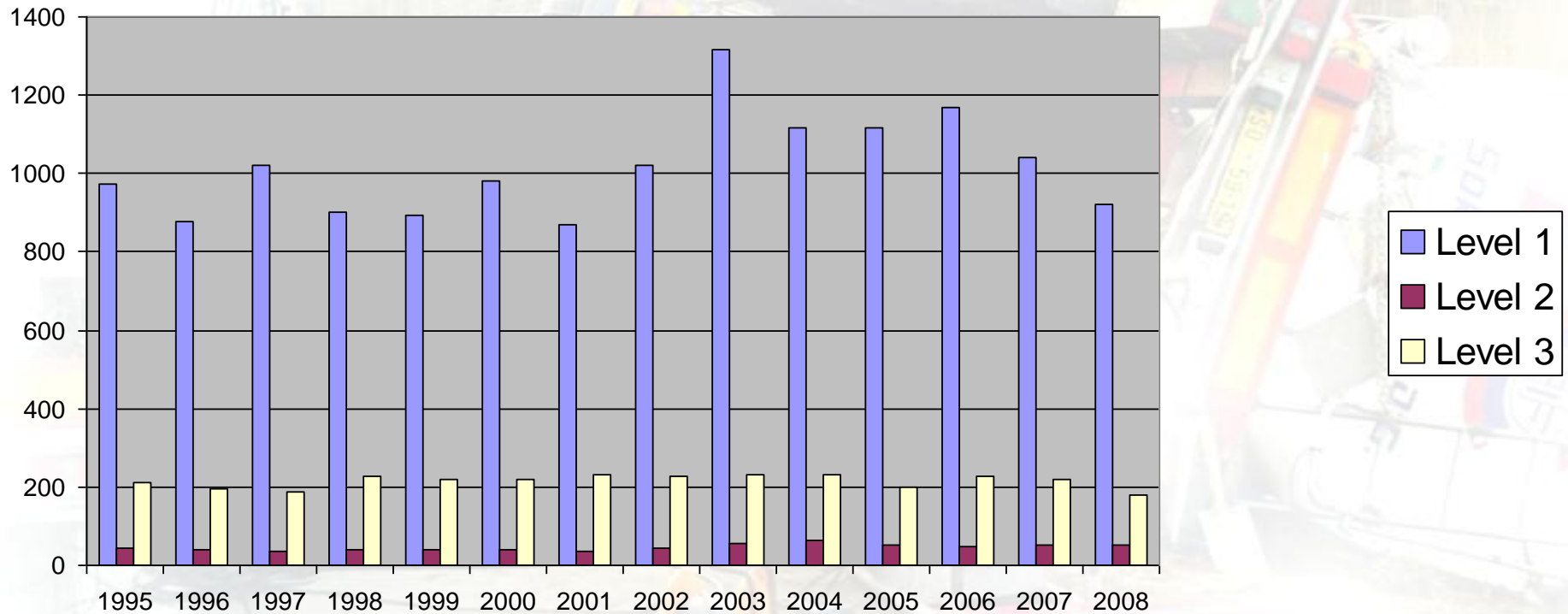
Reimburse insurance company of the party who was responsible for the incident / accident

→ Emergency Services of the company on the scene

→ Experts

→ Equipment Clean-Up (Technical Equipment, Protective Equipment, etc.)

New TUIS-service – database for technical support tank terminalfires

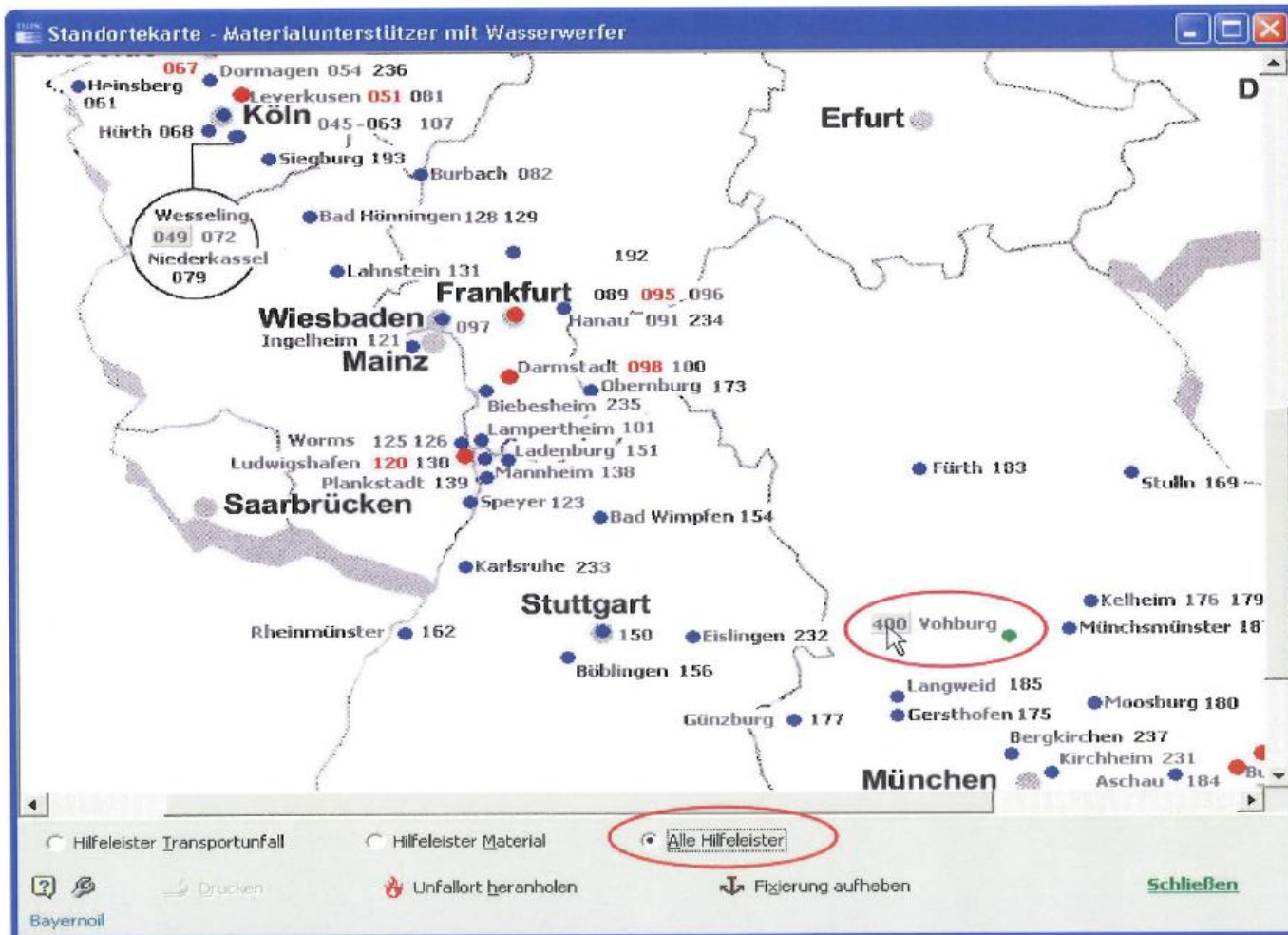


New TUIS-Service – Database for technical support Tank Terminal Fires

- Network among of Chemical Industrie Fire Department and Refinery Fire Department
- Name: Task Force Tank terminal fires
- Alert system via TUIS Call Centers
- Additional help in care of major fires in tank terminals – not a compensation for an site fixed or mobil systems
- Based on German legal requirements „to help eachother in an emergency situation“



Network: Task Force Tank Terminal Fires



VCI



The further new developments of TUIS

- Emergency response cooperation with German Rail
- Cooperation with the German Red Cross for Crisis Situations (UEBI) in coordination with the public fire brigades
- Helicopter casualty transport by SAR Rescue Helicopter Team of the German Army
- Cooperation with Germany THW for technical support at transport-accidents of dangerous goods

Technical Equipment - Level 3

BASF-HAZMAT-TRUCK



Extensive Special Technical Equipment
75 kVA integrated Power Generator
360° Flood Lighting System 6 m / 9000 W
80 kN / 60 m Winch System (Treibmatic)



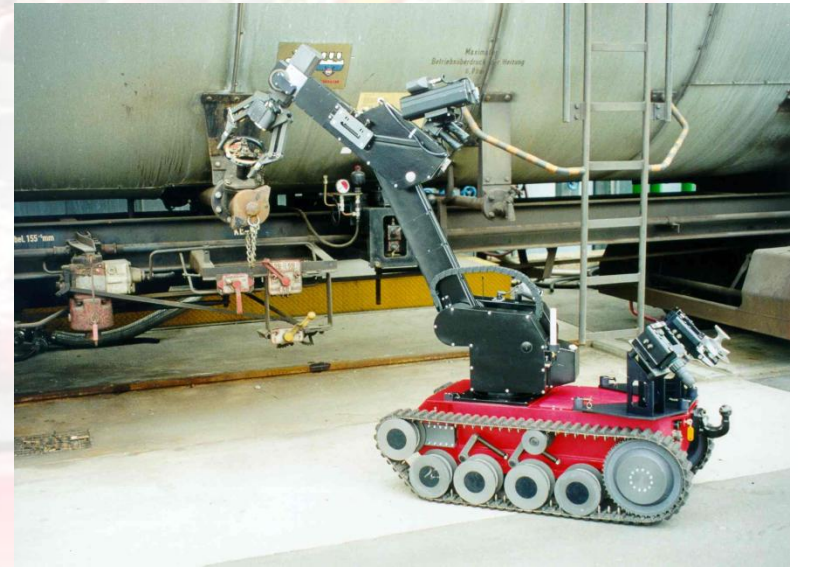
Technical Equipment - Level 3



Remote Controlled Robotic Vehicle (ROBI) – The Manipulator

Step-climbing ability: 35° (70%)
Gripper closing force: max. 600 N
Max. carrier load: 500 kg

Technical Equipment - Level 3



ROBI in action

Technical Equipment - Level 3



Mobile Chlorine Absorption Unit

Chlorine absorption: 150 kg/h

Absorbency: 300 kg

Cleaning it to an extent that the exhaust gas chlorine concentration is less than 10 mg/m^3 (ppm)

Technical Equipment - Level 3



„Williams-Monitor“

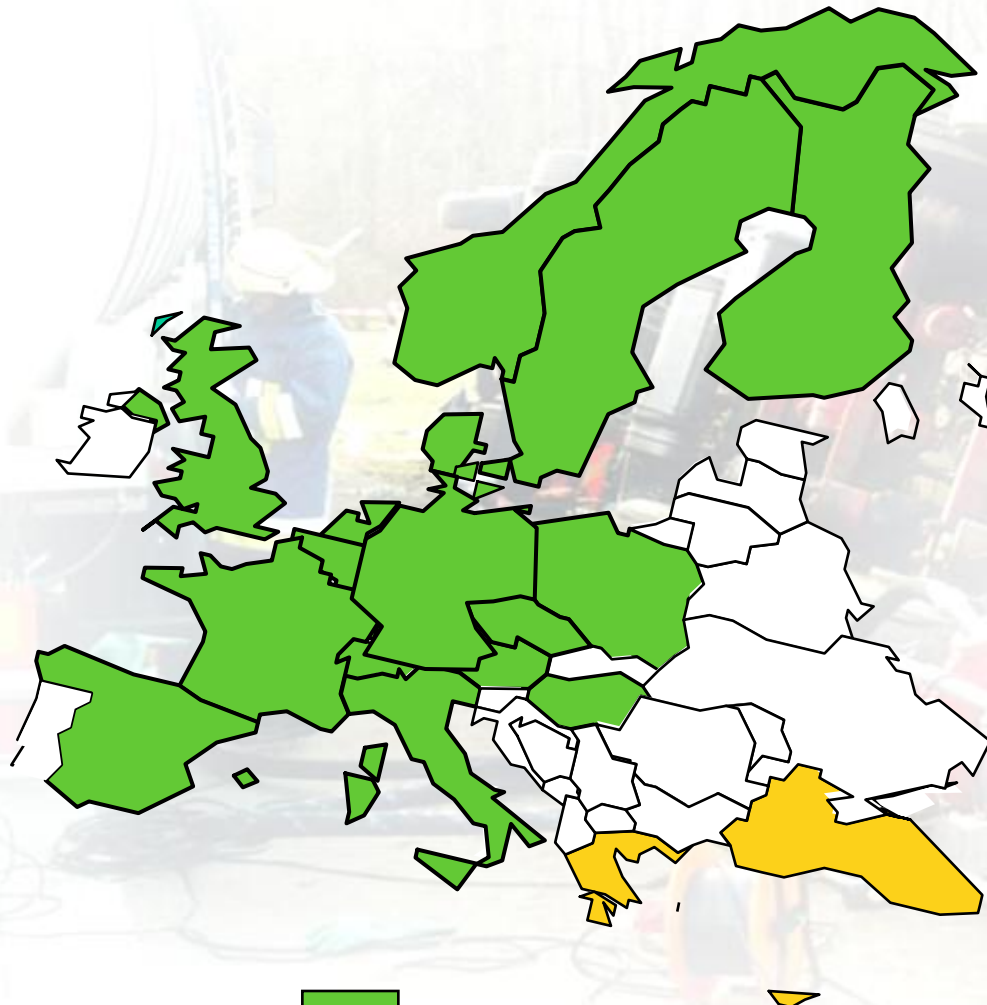


ICE - International Chemical Environment





- **Founded by the European Chemical Industry Council (CEFIC) in 1991**
- **Cross-boarder Transportation Emergency Assistance in Europe**
- **Objectives:**
 - **To train chemical companies (Company Scheme)**
 - **To set up in each country a system like „TUIS“ (Country Scheme)**
 - **To set up in each country a National Response Center (NRC)**
 - **To establish Emergency Response Intervention Cards (ERICs)**

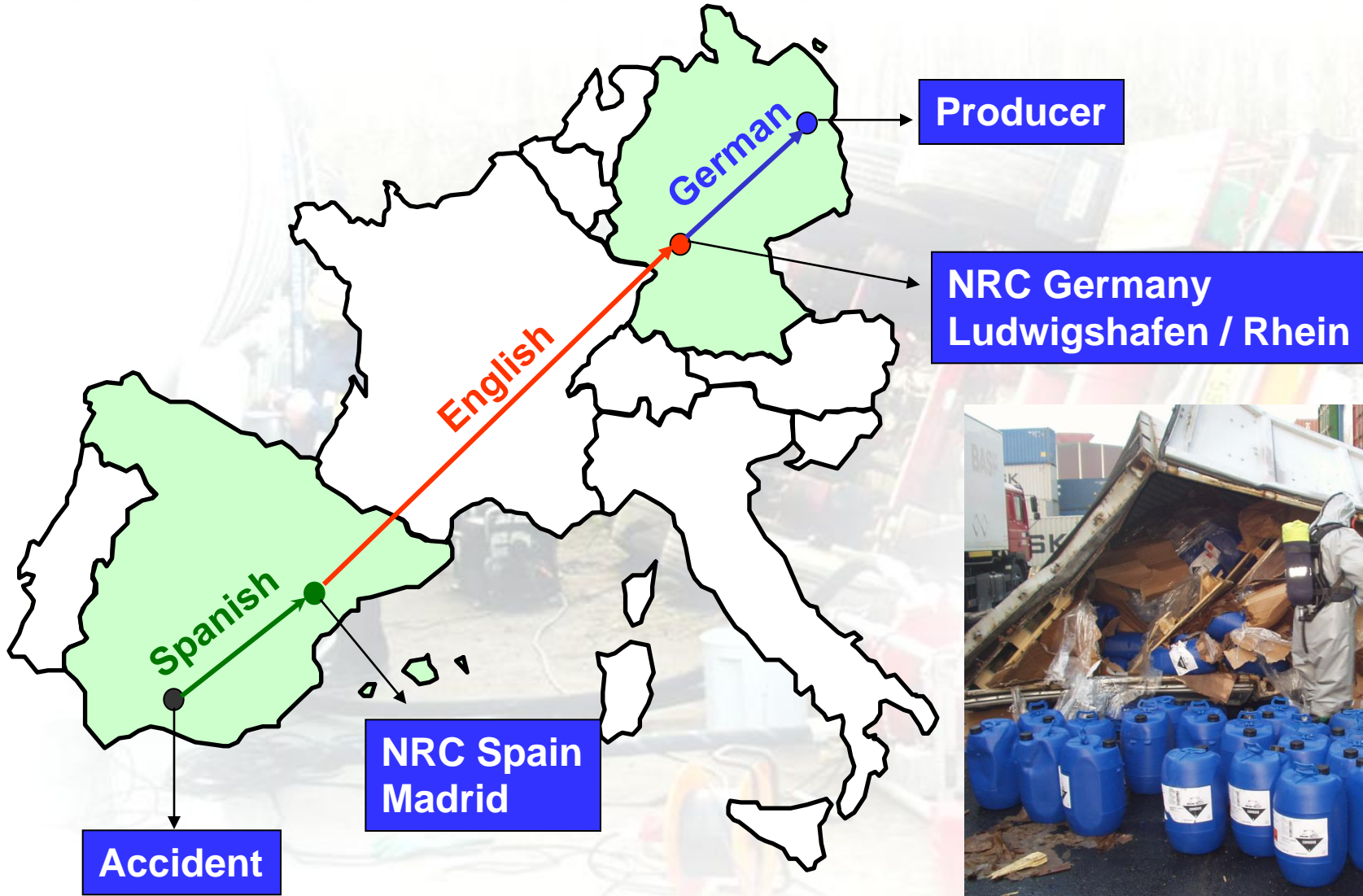
ICE - Country Scheme (17)



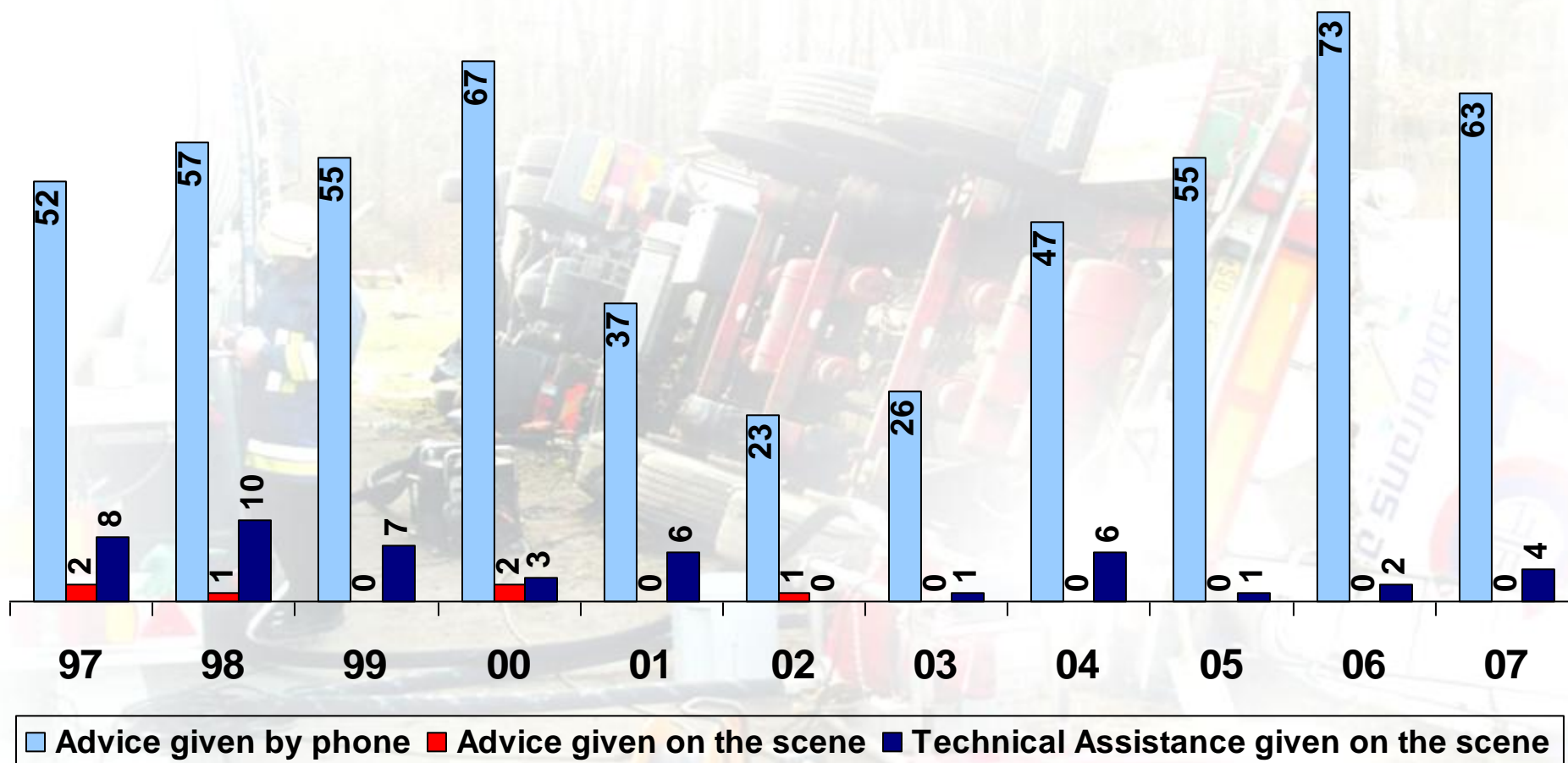
- Germany
- Austria
- Italy
- Sweden
- Netherlands
- Norway
- Great Britain
- Finland
- France
- Spain
- Czech Republic
- Hungary
- Belgium
- Denmark
- Switzerland
- Poland
- Slovakia

 = ICE-System ready for action
 = ICE-System in preparation

ICE - Cross border Communication

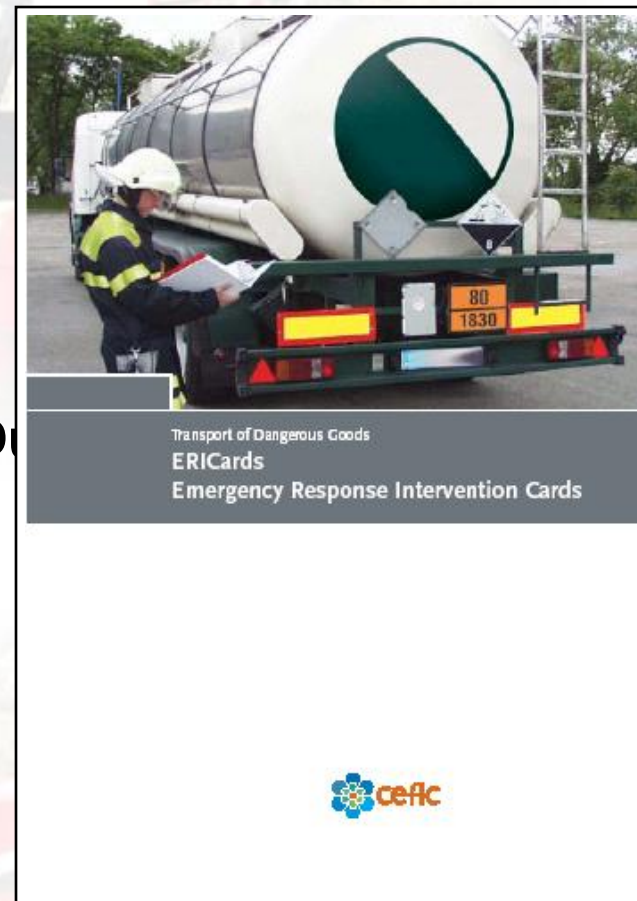


ICE - 1997 to 2007



ERICs - Emergency Response Intervention Cards

- Created by European Expert Group (Chemical Industry, Public Emergency Services, Authorities)
- Content: **Provide Emergency Response Information to trained Responders for the first 30 minutes on the scene**
- Languages (10): a.o. English, German, French, Spanish, Dutch, Italian, Turk
(5): Chinese, Korean, Indian ...
- Information to the next National Response Center → Gateway to the Chemical Industry



Internet: [http:// www.ericards.net](http://www.ericards.net)

1 CHARACTERISTICS

- Hazardous to skin, eyes and air passages.
- Forms explosive mixture with air.
- Asphyxiant: the gas will suffocate without warning.
- The gas is absorbed or readily dispersed by water fog/spray.

2 HAZARDS

- Heating of container(s) will cause pressure rise with risk of bursting and immediate release of expanding vapour cloud which may ignite, leading to explosion (VCE) and creation of a pressure wave.
- Contact with liquid will cause frostbite and severe damage to eyes.
- Gives off toxic and irritant fumes when heated or burning.
- The gas may be invisible and may enter sewers, basements or confined spaces.
- May be narcotic and cause unconsciousness.

3 PERSONAL PROTECTION

- Chemical protection suit.
- Self contained breathing apparatus.
- Protect personnel from radiated heat with water fog curtain or other heat protective measures.
- Insulating undergarments and thick textile or leather gloves.
- Consider wearing standard fire fighting clothing underneath the suit.

4 INTERVENTION ACTIONS**4.1 GENERAL**

- Keep upwind.
- No smoking, eliminate ignition sources.
- PUBLIC SAFETY HAZARD - Warn people nearby to stay indoors with doors and windows closed. Stop any ventilation. Consider evacuation of people in immediate danger.
- Minimise number of personnel in risk area.
- Warn people to leave and not to re-enter basements, sewers or other confined spaces.

4.2 SPILLAGE

- Stop leaks if possible.
- Check explosive limits.
- Use low sparking hand tools and intrinsically safe equipment.
- Knock down or disperse gas cloud with water spray.
- If substance has entered a water course or sewer, inform the responsible authority.

- Ventilate sewers and basements where there is no risk to personnel or public.
- In the absence of specialist advice, drench spillage with water spray to assist evaporation and absorb gas but avoid unnecessary run off which will cause pollution.

4.3 FIRE (INVOLVING THE SUBSTANCE)

- Keep container(s) cool with water.
- Cut off gas supply if safe to do so.
- Do NOT extinguish leaking gas flame unless ABSOLUTELY necessary.
- Work from protected position to reduce risk to personnel. Use unmanned monitors or lances.
- Extinguish with water fog (spray) or dry powder.
- Do not use water jet to extinguish.
- Use water spray to knock down fire fumes if possible.
- Avoid unnecessary run-off of extinguishing media which may cause pollution.

5 FIRST AID

- If substance has got into eyes, wash out with water for at least 15 minutes and seek immediate medical attention.
- Remove contaminated clothing immediately and drench affected skin with plenty of water.
- Persons who have been in contact with the substance or have inhaled fumes should get immediate medical attention. Pass on all available product information.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing adhering to skin.
- Thaw frosted parts carefully with cold water.

6 ESSENTIAL PRECAUTIONS FOR PRODUCT RECOVERY

- Do not use standard recovery equipment. Seek specialist advice immediately.

7 PRECAUTIONS AFTER INTERVENTION**7.1 UNDRESSING**

- Drench contaminated suit and breathing apparatus with water before removing facemask and suit.

7.2 EQUIPMENT CLEAN UP

- Drench with water before transporting from incident.

ERICs - Example

TUIS - ICE - Philosophy

- TUIS and ICE is part of the worldwide „Responsible Care“ of the Chemical industry
- TUIS and ICE are partners of the public danger defence
- The responsibility of the chemical industry for its products ends not at the work gate