



EDSS98 - Emergency Decision Support Systems Workshop , Rome 1998

# Energy Department Strategic Project

**COPY**

<http://erg4146.casaccia.enea.it/>



Managerial Intelligent Node for Decisional  
**Emergency Support**

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# Disasters

## **Global cost of disasters (averaged)**

\$138 billion per year in 1988-1992

\$440 billion per year in 1990-1994

(Red Cross International)

\$880 billion per year in 1995-2000

( A US prominent reinsurance company estimation)

That mainly for increased complexity of integrated urban infrastructure

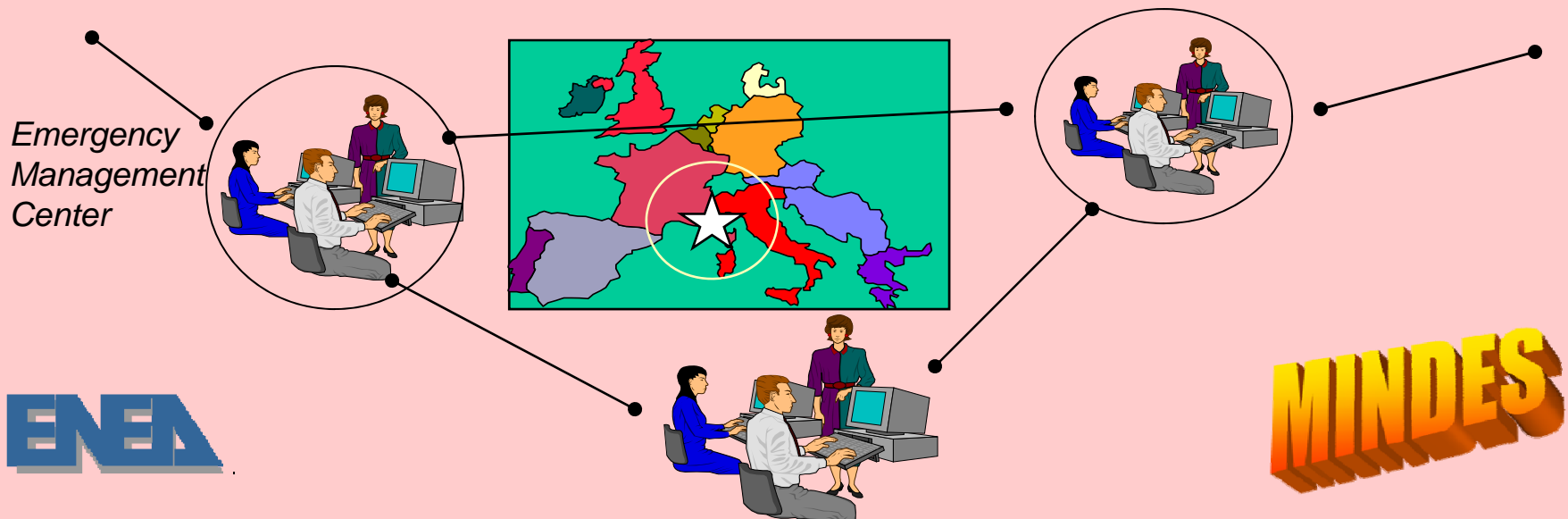


# MINDES Project Context

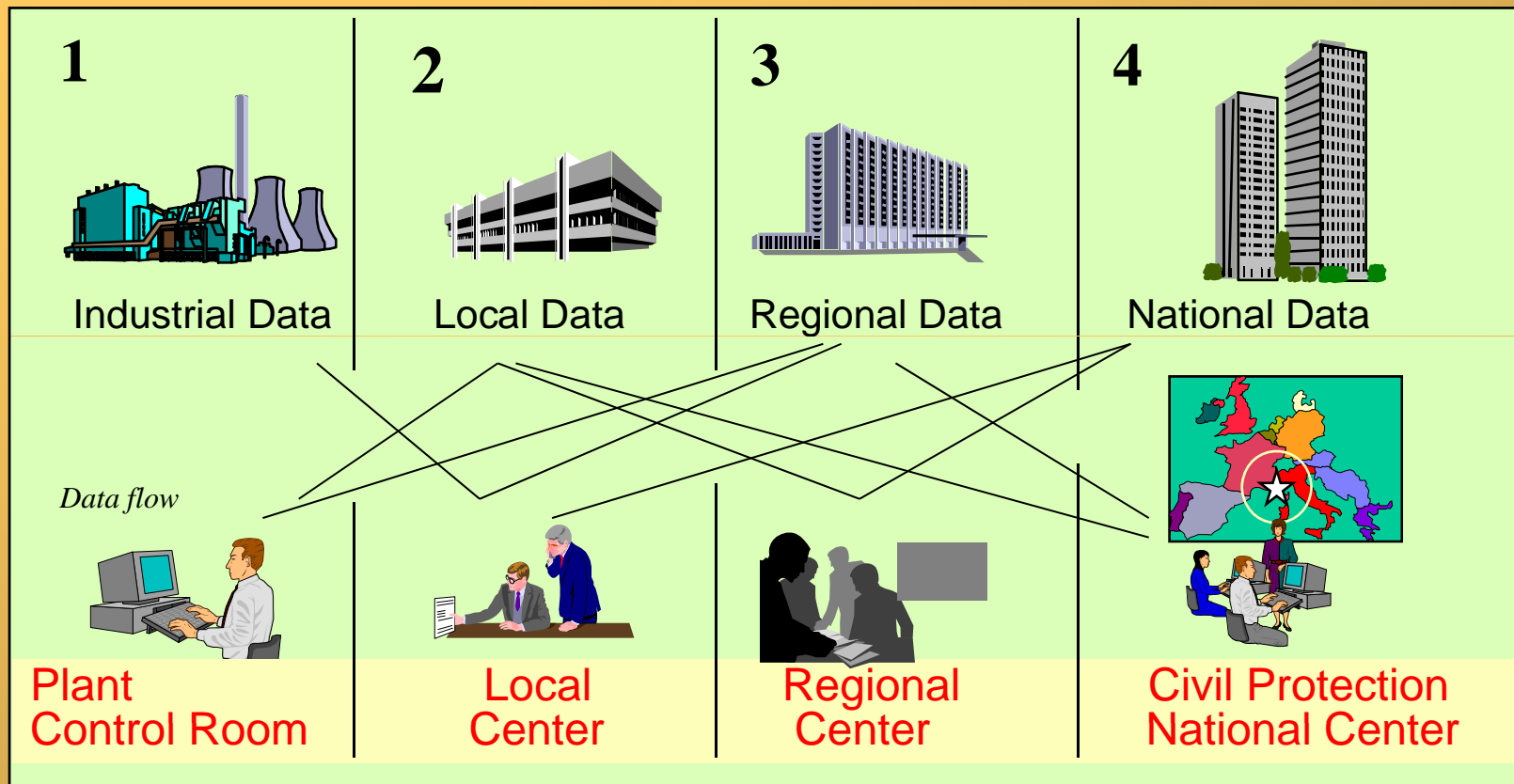


An Italian contribution to the Global Emergency Management Information Network Initiative of G7.

Development of a multipurpose Decision Support System for Emergency Management Information Network



# Emergency Levels



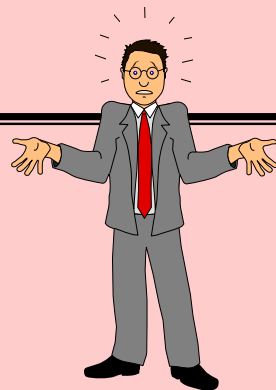


# Objectives

Reduction of the **Probability of Human Decisional Errors** during Emergency Management

by research and development of

Multipurpose Intelligent Decision Support Systems



ENEA

MINDES

# MINDES is an umbrella project

- ⚙ Indicates common long term strategy for national and international R&D projects realized in ENEA
- ⚙ Unifies the past experiences of ENEA in the field of emergency management with the present and future activities
- ⚙ Employs innovative software technologies in frame of one integrated system
- ⚙ Verifies and validates new, advanced solutions in concrete industrial environments of the end-users.



# Energy Department Experience (1989 - ...)



**ISEM:** Information Technology Support for Emergency Management;  
Goal: **Information Support** based on Large Data Bases.



**MUSTER:** Multi-Users System for Training and Evaluating Environmental Emergency Response. Genoa Oil Port.  
Goal: **Training support in emergency managers cooperation.**



**CIPRODS** : Civil Italian PRotection Overview and Decision Support . - The Italian Research Council (CNR).  
Goal: **Supervision of territorial emergency** on the national level.



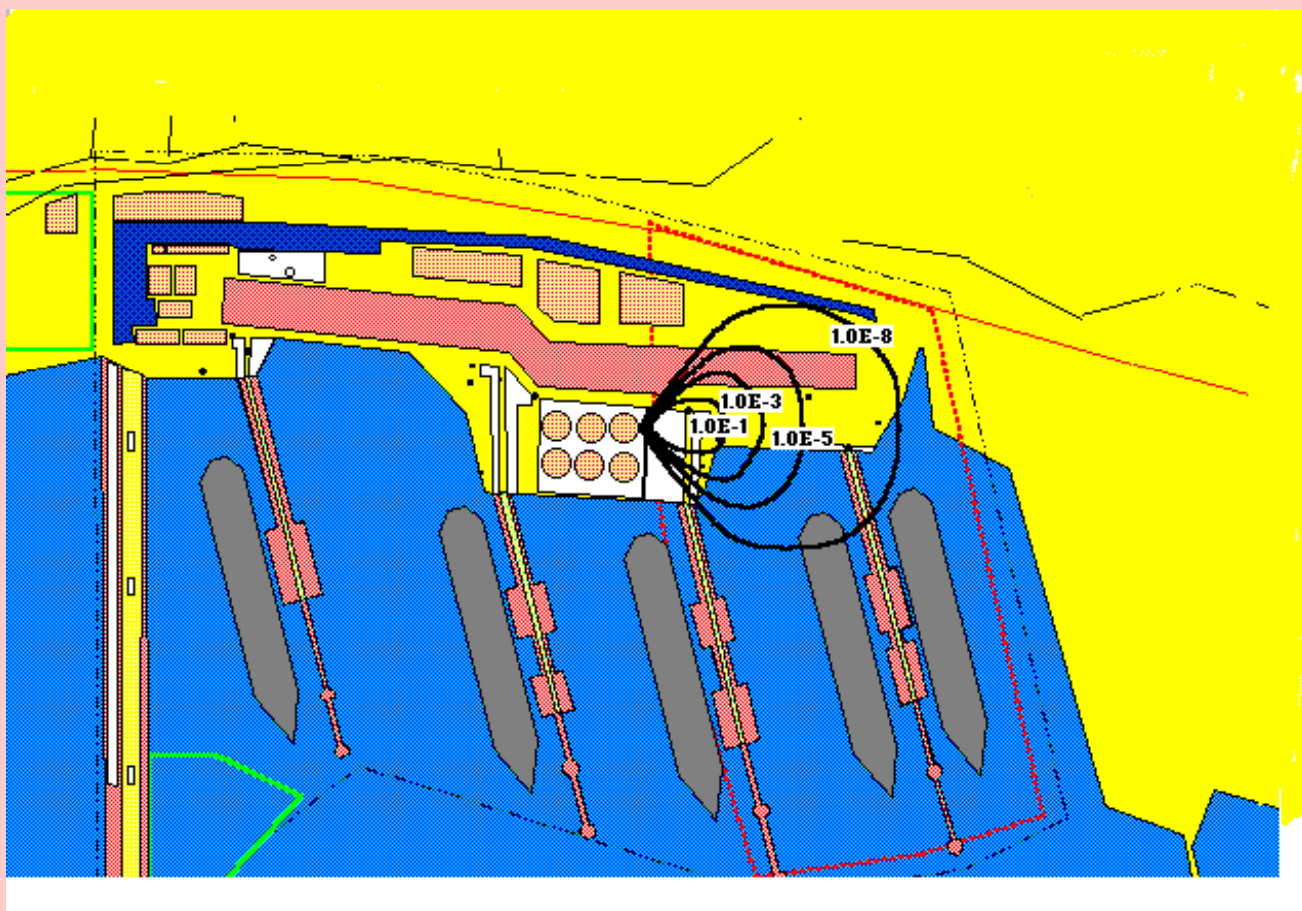
**GEO:** Emergency Management on Oil Transport Devices  
- SNAM (Lines and Deposits)  
Goal: Emergency **operator's active DSS**



**IDA** - Intelligent Decision Advisor; R&D MICA Program.  
- Partners: IRST- Trento, Univ. di Roma "La Sapienza"  
Goal: **Multipurpose intelligent agent-based system**

**MINDES**

# Domain of MUSTER Intervention



Genoa Oil Port.



# MINDES Strategy

- ① **From passive information support to active-intelligent advisors**
- ② **From domain-dependent to domain-independent adaptable systems**
- ③ **Integrated solutions for Training and Decision Support**
- ④ **From Plant Operators to Civil Protection emergency managers.**
- ⑤ **Transfer of innovative theoretical concepts & engineering solutions to the working prototypes of EM IDSSs**
- ⑥ **Close cooperation with emergency authorities (end-users)**
- ⑦ **Close cooperation with national and foreign research centers**
- ⑧ **Preliminary Proposals of the concrete applications**
- ⑨ **Knowledge dissemination - courses and workshops**



# Our Offers and Needs

- **consultations** relative realistic decision-support **solutions**
- **proposals** of **projects** for a concrete IDSS system
- **prototyping** - a **development** (a working prototype) of new innovative user-friendly IDSSs
- **cooperation** in Decision support system implementation and **exploitation**

- **A strategic interest** on the political level
- **Various co-operations** with emergency-management authorities
- **co-working** with domain-experts

