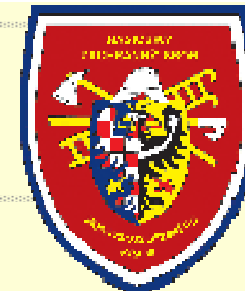


Fire Rescue Brigade of Moravian-Silesian Region  
Branch of Civil Protection and Emergency Management



# Training of Emergency Preparedness

por. Ing. Kateřina Blažková, Ph.D.


# Summary

1. Emergency preparedness
2. Cross-border cooperation and Aid Agreement
3. Preparing of training
4. Practice: Odra 2007 training
5. Urban Search and Rescue Team
6. Measures planning
7. Resume





# Summary

1. **Emergency preparedness**
  2. Cross-border cooperation and Aid Agreement
  3. Preparing of training
  4. Practice: Odra 2007 training
  5. Urban Search and Rescue Team
  6. Measures planning
  7. Résumé
- 

# 1. Emergency preparedness

- Preparation of measures for prevention of accident caused damages or their reduction
- Includes
  - Determination of accident scenarios
  - Response planning for accident and their management
  - Preparation of equipment and forces to response
- Serves for disasters, calamities and others extraordinary events such as major accident, flood



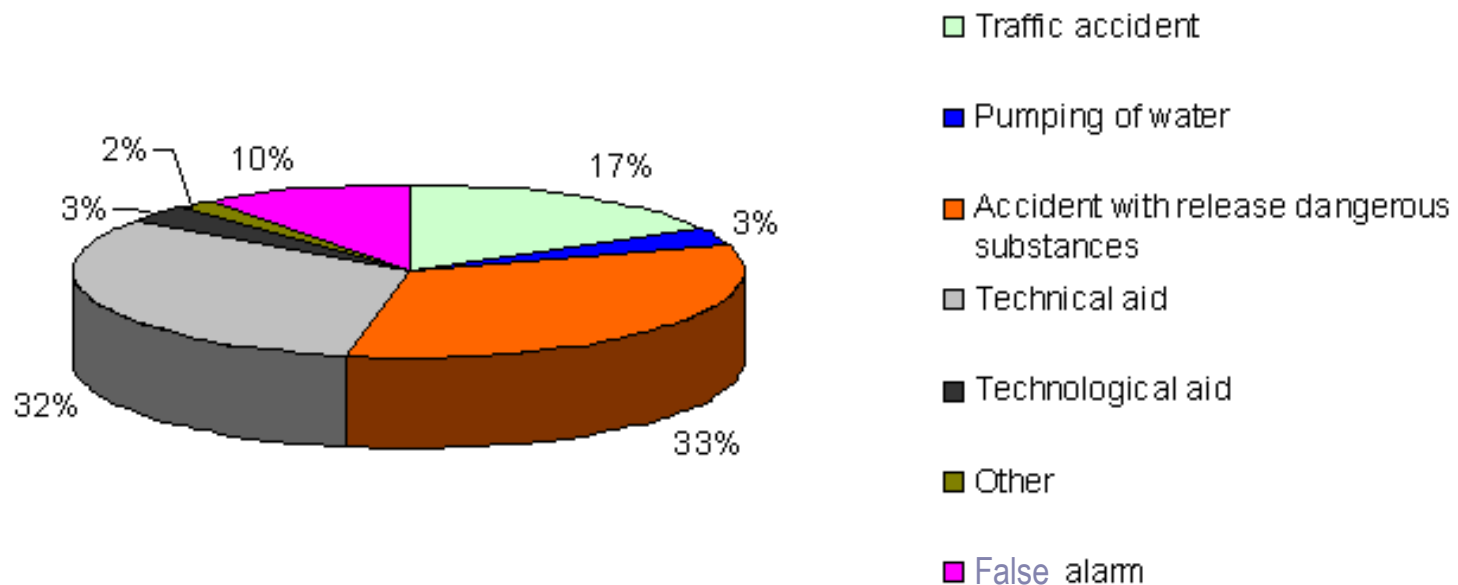
# 1. Emergency preparedness

Summary number of accidents according to regions in CZ

Region	2005	2006	2007	Index 06/07	Proportion in ČR v %	% difference compared to 2007
City of Prague	7 912	7 016	6 919	99	8,5	0,2
Central Bohemia	12 737	10 599	9 201	87	11,3	-1,2
Southern Bohemia	6 778	5 657	5 216	92	6,4	-0,3
Plzeň	5 898	5 720	6 074	106	7,4	0,6
Karlovy Vary	3 037	3 171	3 004	95	3,7	0
Ústí	7 583	8 252	7 221	88	8,9	-0,9
Liberec	2 912	3 210	2 614	81	3,2	-0,6
Hradec Králové	4 425	4 542	4 469	98	5,5	0,1
Pardubice	3 758	3 784	3 937	104	4,8	0,3
Highland	4 897	4 838	5 016	104	6,1	0,4
Southern Moravia	5 819	6 928	6 210	90	7,6	-0,6
Olomouc	4 839	5 214	5 861	112	7,2	1
Zlín	2 354	2 706	2 384	88	2,9	-0,3
<b>Moravian-Silesian</b>	<b>11 282</b>	<b>12 886</b>	<b>13 462</b>	<b>104</b>	<b>16,5</b>	<b>1,3</b>
Total	84 241	84 523	81 588	97	100	0

# 1. Emergency preparedness

**Attendance according to type in CZ, 2000 - 2007**



# 1. Emergency preparedness

## Activities:

- Fire Protection
- Protection of Population
- Crisis Management
- Communication and Information Systems
- Emergency Call Centre
- Fire Rescue Service
- Services
- Integrated Rescue System



# 1. Emergency preparedness

- Suggestion of Safety Report and Safety Program
- Audit of Operators
- Cooperation with determine Emergency Planning zone
- Elaborate External Emergency plan

## Fire rescue station of MSR

- 33 professional fire station (include 13 station of operators)
- 80 volunteer fire company





# 1. Emergency preparedness

## „Seveso“ operators of MSR

- Chemical industry – ammonia, chlorine
- Energetic – metallurgic gases (contain carbon monoxide, hydrogen, methane...)
- Explosive storage - explosive
- Hard Industry (metalwork) - metallurgic gases (coke oven gas, converter gas, stack gas)
- Storage and distribution of LPG
- Storage of technical gases – propane, butane, acetylene, hydrogen, oxygen
- Paper industry - ammonia
- Pharmaceutical industry - ammonia
- Other – storage of flammable goods



# 1. Emergency preparedness

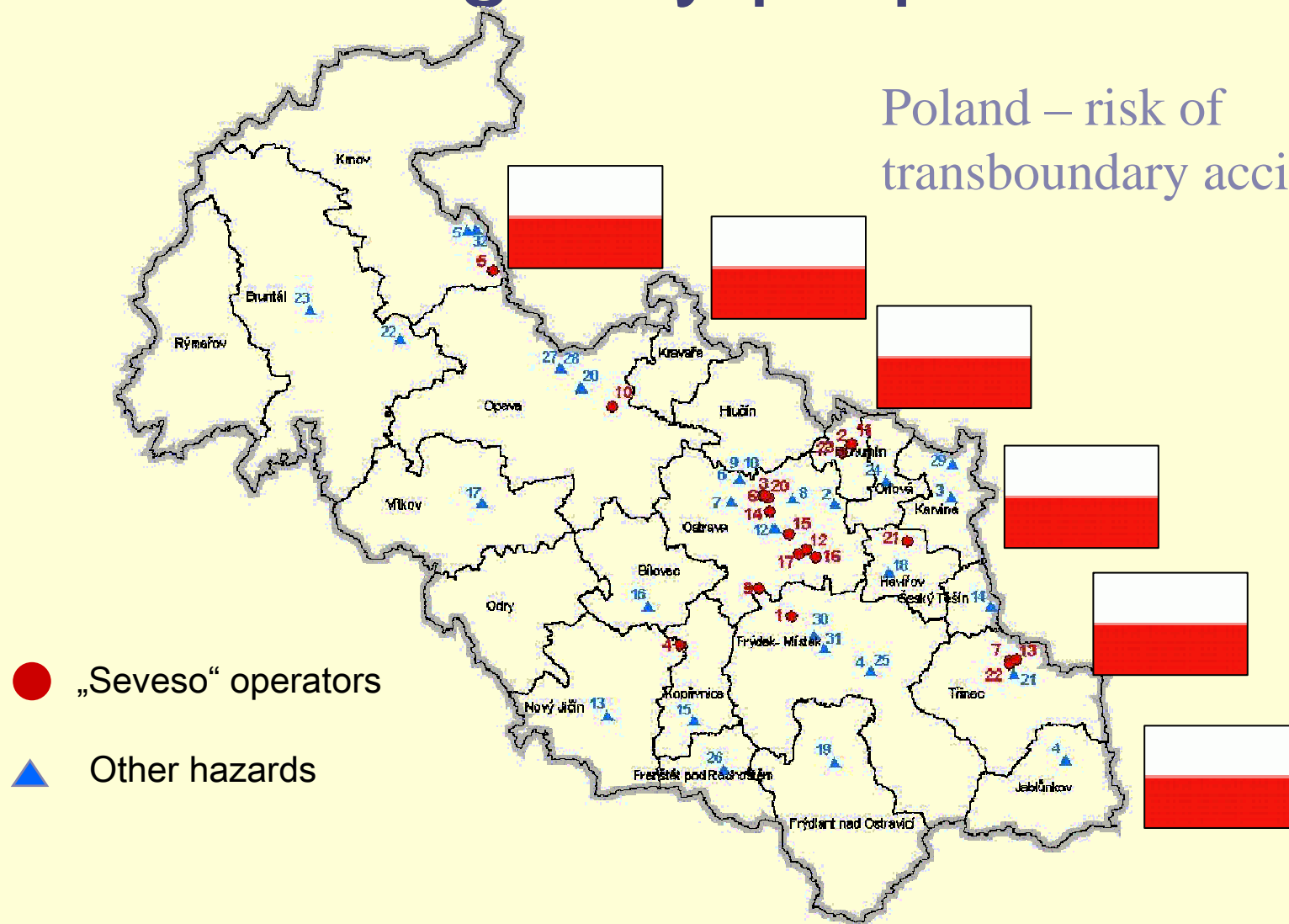
## Other hazard operators:

- Ammonia
  - ice pools
  - food-processing industry
  - refrigeration stores
- Chlorine
  - water preparing plant
- Domino-effect subjected operators
  - in danger caused by surrounding operators




# 1. Emergency preparedness

Poland – risk of transboundary accident





# Summary

1. Emergency preparedness
  2. **Cross-border Cooperation and Aid Agreement**
  3. Preparing of training
  4. Practice: Odra 2007 training
  5. Urban Search and Rescue Team
  6. Measures planning
  7. Résumé
- 




## 2. Cross-border Cooperation and Aid Agreement

### National agreement

- CR has contracted the agreement about cooperation and aid for disasters, calamities and other extraordinary events with all border states (Slovakia, Poland, Germany, Austria) and with Hungary

### Regional agreement

- Specific for region needs
  - Relationship between Risk assessment and Equipment assessment
  - Inclusion to the Regional alert Plan of the IRS
  - Moravian-Silesian Region and Poland
- 


## 2. Cross-border Cooperation and Aid Agreement

- Agreement makes possible to rescue corps during disasters run over state border
- Plea for aid is transmitted by emergency call centre (of Region or Local)
- These aids coordinate common
  - Education
  - Training
  - Change of information
  - Used radio station (frequencies)
  - Substitution of damage
  - Used technique






## 2. Cross-border Cooperation and Aid Agreement

- Moravian-Silesian Region has agreement with Poland *powiaty*
    - Cieszynski
    - Wodzislawski
    - Raciborski
  - Their Rescue corps are included in Plan of action and Regional alert plan of the Integrated Rescue System
  - Cooperation is without language barriers
  - For provision of effective communication are important trainings
- 



# Summary

1. Emergency preparedness
  2. Cross-border cooperation and Aid Agreement
  3. **Preparing of training**
  4. Practice: Odra 2007 training
  5. Urban Search and Rescue Team
  6. Measures planning
  7. Resumé
- 



# 3. Preparing of training

## Commission training

- As authentic transboundary accident
- Demands for preparing
- Known by inner circle of people only
- Good way to resource emergency preparedness

## Tactical training

- Important for education, training of cooperation, communication and change of information
- Known by lots of people
- Real cooperation during flood






# 3. Preparing of training

- Verification and actuality of external emergency plan


- Training limits:

- Choose in scenario - Maximum–Credible Accident Scenario x Worst Case Scenario x Representative scenario
  - Emergency zone are determined by Risk Analysis (models, prognoses)
  - Planning measures are depended on quality of risk analysis
  - ? Who knows about the training?
  - ? Who knows the scenario?
  - Simulation of monitoring of dangerous substances concentration is very difficult during training
  - Information of public – panic prevention
  - Public in trains now passively only
  - We can't limite public during the training (according to the law)
- 



## 3. Preparing of training

### Training objectives:

- Revision of cooperation parts of IRS and Administrative authority while major accident with a view to:
    - Activation parts of IRS which are participated in rescue operations and clearance
    - Coordination parts of IRS by emergency call centre
    - Tactic of operations
    - Notification local authorities and other interested authorities
    - Public Warning and object in eminent
- 

# 3. Preparing of training


## Participants of emergency training:

- Operators of hazard
- Emergency call centre - Operating and Informating centre of IRS
- Warning centre – activation of sirens
- Unit of Fire protection – rescue operation and clearance
- Policy – ban and regulation of traffic, security
- Salvage and rescue service – first aid, transport to hospital
- Object in eminent – education facilities, health care institution, sanitary facilities, and other when there are people assembled
- Public in emergency zone






# 3. Preparing of training

- Preparing of tactical training
    - Objectives of training – hazard type, dangerous substance, type of release (instantaneous, continuous, or time limited), probable impact of employees, civil persons, environment and activity
    - Scenario of accident and training
      - Determine scenario: Representative scenario, maximum-Credible Accident Scenario or worst case Scenario
      - Determine weather conditions which have general main influence on dispersion of toxic gasses and determine actual emergency zone: Stability Classes - atmospheric inversion or convection
      - Model of actual emergency zone for training
    - Place and date
    - Plan of processing of preparedness training
    - Security of Materials – techniques, helper, watcher
    - Time table
    - Responsible person
    - Watchers and their activities – a person who controls activity of all parts of IRS (timetable, tactic, listen siren, behaviour of civil...)
    - Authorization of training plan
- 




# Summary

1. Emergency preparedness
  2. Cooperation and Aid Agreement
  3. Preparing of training
  4. **Practice: Odra 2007 training**
  5. Urban Search and Rescue Team
  6. Measures planning
  7. Resumé
- 




## 4. Practice: Odra 2007 training

- Czech – Poland training, June 2007
  - Tree independent parts:
    1. Release of black oil (mazout) through sewerage to river Odra
    2. Release of chlorine from Bochemie and impact to population
    3. Traffic accident of tank and release and fire of fuel (petrol)
- 



## 4. Practice: Odra 2007 training

### 1. Release of mazout (black oil) through sewerage to river Odra

- Release mazout from Bochemie during pumping of tank
  - Release to storm sewer and river border Odra
  - Contamination of Odra was floated to Poland
  - Cooperation PL and CZ rescue corps
  - Building of floating barrage (stable and mobile)
    - Rescue service of PL has floating barrage (concrete panel) which can divide Odra within short time (10 minutes)
- 




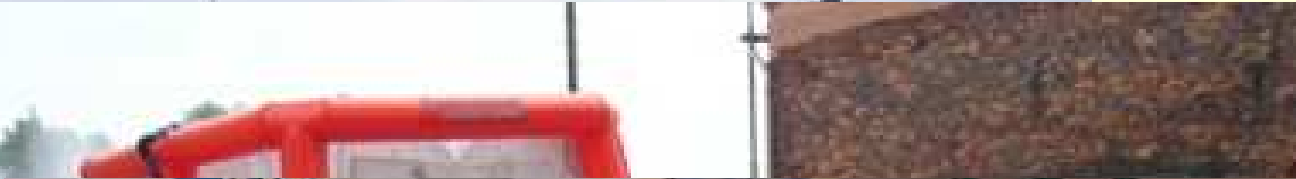
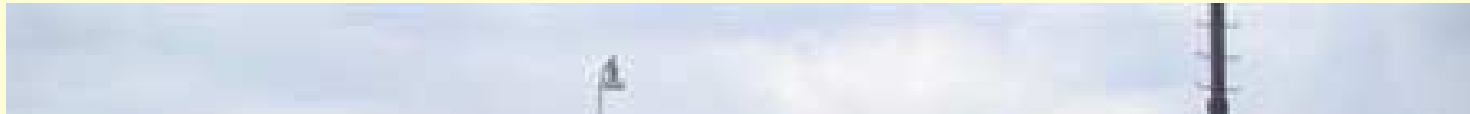




## 4. Practice: Odra 2007 training

### 2. Release of chlorine


- from Bochemie (chemical industry)
  - impact to civil population
  - Mobile emergency call centre
  - Measure for stopped release and stopped dispersion in the air
    - Spraying heavy gas without water-wash
  - Monitoring of dangerous substances concentration
  - Measure from protection of population at contiguous of school
    - Sheltering in buildings
    - Improvised person protective
    - Advisable public behaviour
- 

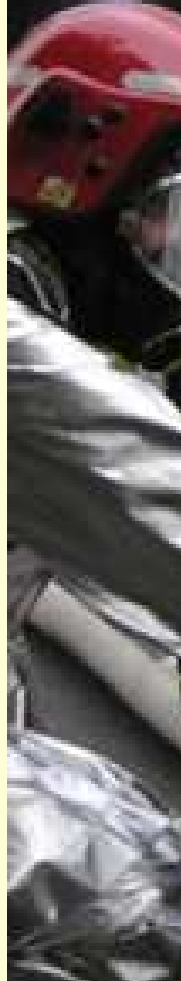
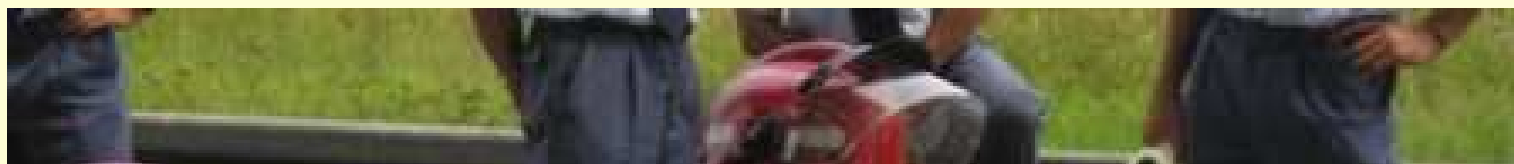




## 4. Practice: Odra 2007 training

### 3. Traffic accident of tank

- Release and fire of fuel (petrol) in CZ
  - For reasons traffic diversion during release of chlorine
  - Rescue operation and clearance were made by PL rescue corps
  - Fire fighting by water cannon
- 





## 4. Practice: Odra 2007 training


### Evaluation of Training

- Communication of Emergency call centres of Ostrava and Katowice
  - data-video-teleconferencing – ideal for change information
- Run over state border - fluent
- Cooperation of rescue corps
  - There were preparation bilingual title of rescue and salvage techniques equipment
  - There was organised workshop about tactic processing both country





# Summary

1. Emergency preparedness
  2. Cooperation and Aid Agreement
  3. Preparing of training
  4. Practice: Odra 2007 training
  5. **Urban Search and Rescue Team**
  6. Measures planning
  7. Resumé
- 

# 5. Urban Search and Rescue Team

- During training are used USAR Team: Urban Search and Rescue
- USAR CZ is located in Prague and Ostrava
- USAR is coordinated by OSOCC (On-side Operational Coordination Centre)
- USAR tools:
  - Special technical, rescue and salvage tools,
  - Logistics equipment,
  - Communication equipment,
  - Health resources
- USAR activity:
  - Rescue work
  - Logistic
  - Guidance
  - Aid for outland







## 5. Urban Search and Rescue Team

- Establishment of OSOCC (On-Site Operational Coordination Centre)
  - Contact place, where there are delegates of the rescue corps
  - Communicate with LEMA (Local emergency management Authority)
  - Determine Base of Operation





## 5. Urban Search and Rescue Team


- Last we were trained:
  - in November 2008 (Poland, Hungarian, Slovakia, CZ)
  - 160 attenders, 46 figurants, 28 organizers
  - There were simulated lots of rescue operations








# Summary

1. Emergency preparedness
  2. Cooperation and Aid Agreement
  3. Preparing of training
  4. Practice: Odra 2007 training
  5. Urban Search and Rescue Team
  6. **Measures planning**
  7. Resumé
- 



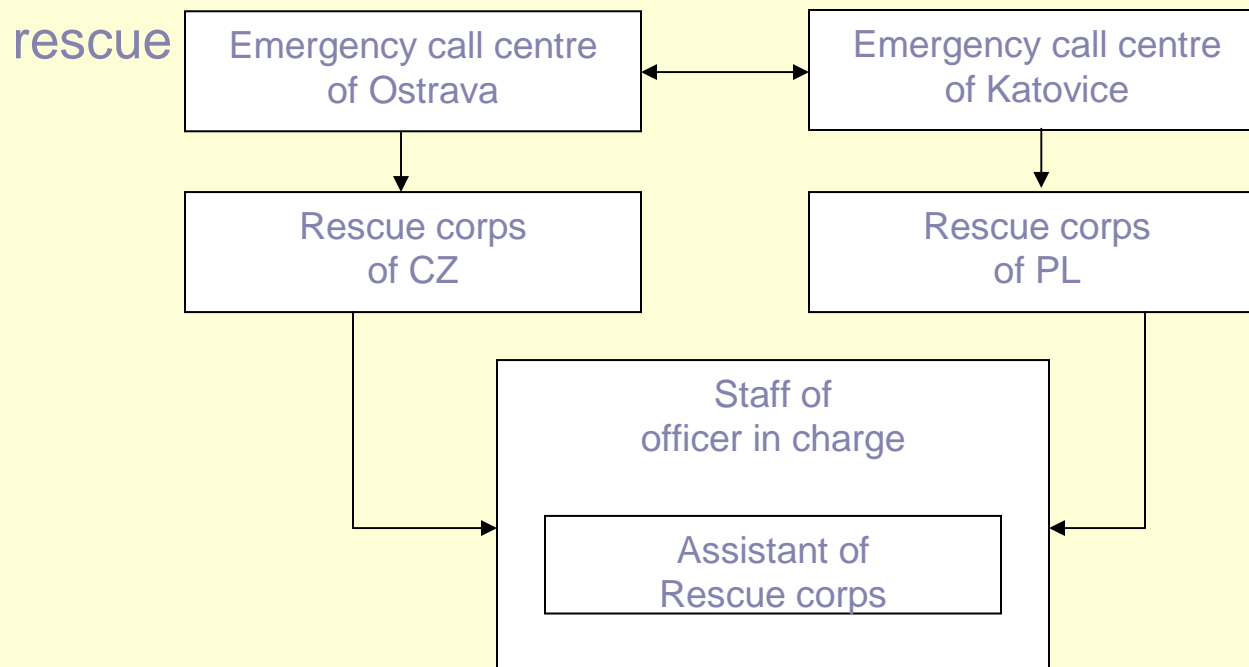
## 6. Measures Planning

- A. Communication and Notification
  - B. Warning
  - C. Minimizing of impact accident
  - D. Monitoring of dangerous substances concentration
  - E. Protection of Population
  - F. Emergency planning
- 

# 6. Measures Planning

## A. Communication and Notification

- Emergency call centres of Ostrava and Katowice communicate without data-video-teleconferencing
  - View situation in maps and draft actuality
- Contact place –officer in charge, present of assistant of rescue







# 6. Measures Planning

## B. Warning systém

- Stable siren
  - All area of emergency planning zone is covered in acoustic signal
  - Only parts of zone is covered in verbal signal
  - We can say text into the siren with advisable public behaviour
- Mobile siren
  - there isn't verbal signal stable siren, for verbal information in parts of zone
  - There is information used for given emergency information (advisable public behaviour)



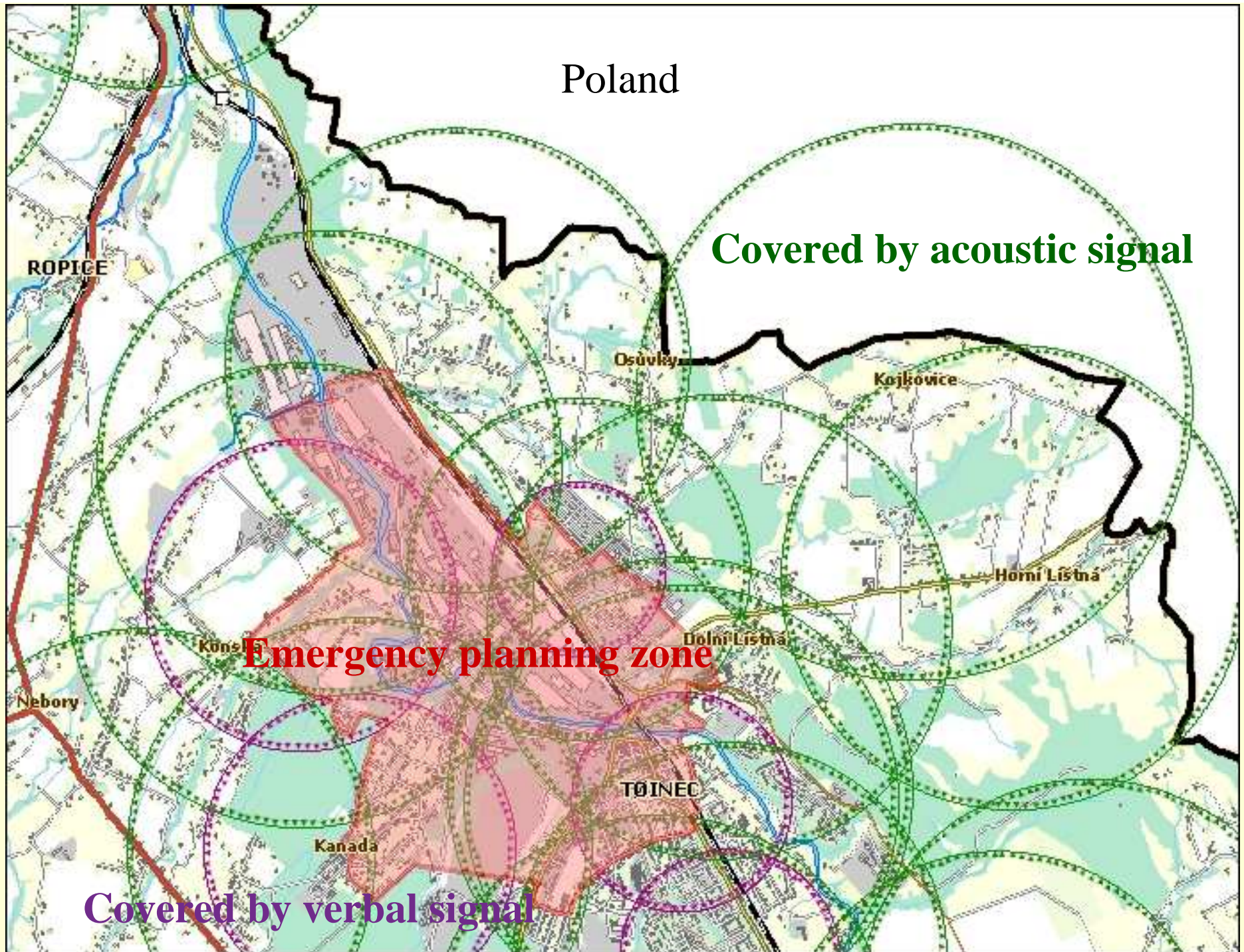


Poland

Covered by acoustic signal

Emergency planning zone


Covered by verbal signal



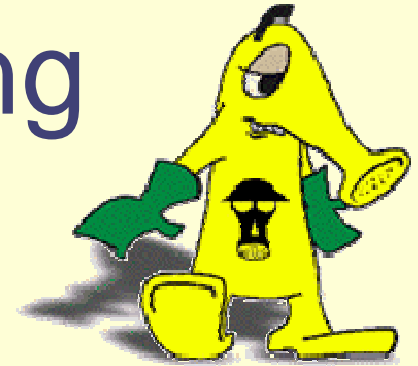


## 6. Measures Planning

### C. Minimizing of impact of the accident

- Measures for stopped release and stopped dispersion in the air or water
  - Monitoring of concentration of dangerous substances
    - Monitoring Instruments and their Sufficiency
    - Monitoring on the place of accident
    - Determine limit of concentration (used for protection of population)
    - For accident don't use maximum allowable concentration (it's used for workplace)
- 

# 6. Measures Planning



## D. Monitoring of dangerous substances concentration


- Emergency zone in plan is only prognoses
- First rescue corps must start monitoring
- Evaluate concentration with limits for protection of population
  - First emergency zone – probability of fatalities, enter only for Rescue corps
  - Second EZ – ERPG (Emergency Response Planning Guidelines)
    - ERPG 3: The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing or developing life-threatening health effects.
  - Third EZ – Safety zone – limits for protection of population
- For accident don't use maximum allowable concentration (it's used for longer exposition)





# 6. Measures Planning

## E. Protection of Population

- Protection of population is planned as Improvised protective equipment
    - Sheltering in buildings –protection property of builds, enter door, windows and order vent, which can dangerous substances indoor
    - Improvised person protective – mask, wet napkin, glasses – diving goggles, overall, glove, gum boots ...
  - Advisable behaviour of public
  - We rely on education and discipline of public
  - Prevention:
    - Information of public in emergency planning zone by prospectus
      - Edition by local authority
      - Describe hazard
      - Advisable behaviour of public
    - Education at school (civil protection is educated at primary and secondary school, but only 6 hour / year)
    - Training
    - Preventively education activity
- 

# 6. Measures Planning

## E. Protection of Population

- Preventively education activity
  - Provide under Fire Rescue Brigade
  - Educate child in primary and secondary school
    - Behaviour of population during fire, flood, dangerous substances release



# 6. Measures Planning

## F. Emergency planning


### ● Emergency plan of Region

- Contain Risk assessment inclusive hazard that can exceed state board
- Not only zone of emergency planning
  - There are determine for neutrally weather condition
  - During Atmospheric Inversion can be danger neighbouring country






# Summary

1. Emergency preparedness
  2. Cooperation and Aid Agreement
  3. Preparing of training
  4. Practice: Odra 2007 training
  5. Urban Search and Rescue Team
  6. Measures planning
  7. **Resumé**
- 



## 7. Résumé

- Don't afraid identified mistakes
  - Propose to measures and realise them
  - TRAIN – TRAIN - TRAIN
- 



Thank you for your attention !

[Katerina.blazkova@hzsmk.cz](mailto:Katerina.blazkova@hzsmk.cz)