

2. Organisational aspects of Emergency response: the case of the Netherlands

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Content

- Emergency management
- Processes

Emergency response in the Netherlands

- 19 types of disasters (e.g. aircraft crash, flooding, etc.)
- 4 levels of emergency on North sea (Categories I-IV)
- 7 levels of emergency in Schiphol (VOS 1-7)
- 5 levels of emergencies on land (GRIP1 to GRIP5)
- 25 processes (e.g. traffic control, disinfection of vehicles, measurements and observations)
- 4 primary responsible units (fire brigade, police, paramedics, municipality)

19 types of disasters

1. Aircraft accidents
2. Accidents on water
3. Accidents on land
4. Accidents with fire/explosive materials
5. Accidents with poisonous materials
6. Nuclear accidents
7. Danger for the health of citizens
8. Outbreak (people and animals)
9. Accidents in tunnels
10. Fire in large buildings
11. Collapse of large buildings
12. Panic
13. Distraction of public order
14. Flood
15. Nature fires (forest fire)
16. Extreme weather conditions
17. Failure in utilities
18. Disaster from a distance
19. Terrorism

North Sea

- SAR (Search and rescue), 1994
- Law ERN (WetBON), 2006 (emergency response)
- Coast watch, SAR, Ministry of water (RWS), National Coordination team, Ministry of internal affairs (BZK)
- Scaling up from normal situation to alarming the ministry of internal affairs.
- Correspond to GRIP

Schiphol

VOS- aircraft accidents Schiphol

- Airplane accidents Schiphol (VOS=Vliegtuig Ongeval Schiphol)
- VOS 1 (no problems with landing but strange smelt)
- VOS 2, 3, 4 (Mayday call, expected problems with landing)
- VOS 5, 6, 7 crash
- VOS 2, 5 – small airplane (50 people); 3,6 (between 50 and 250), 4,7 (above 250)
- VOS 5, KML Cityhopper (Cardiff) (4-04-1994)
- VOS 6, Turkish Airlines (Istanbul) (25-02-2009) (128 passengers 7 crew)

<http://aviation-safety.net/database/record.php?id=19940404-1>

Relation between VOS and GRIP

VOS	meaning	GRIP (minimum)
1	Panpan call (some problems, but landing is OK)	0
2	Mayday call 50 persons (problems with landing)	2
3	Mayday call 50 -250 persons (problems with landing)	2
4	Mayday call more than 250 persons (problems with landing)	2
5	Crash, 50 persons on board	3
6	Crash, 50-250 persons on board	3
7	Crash, more than 250 persons on board	3

Emergency procedure

- Scaling-up from daily routine to disaster of a national level
- Disasters of large impact are difficult to manage = > few disasters types get immediately the highest level of emergency
- The procedure refers to the responsible emergency units only. Other parties may be involved but they follow orders or participate as advisors
- The processes are derived from daily work of police fire brigade, ambulance, municipality
- Mayer is the leading authority in a municipality

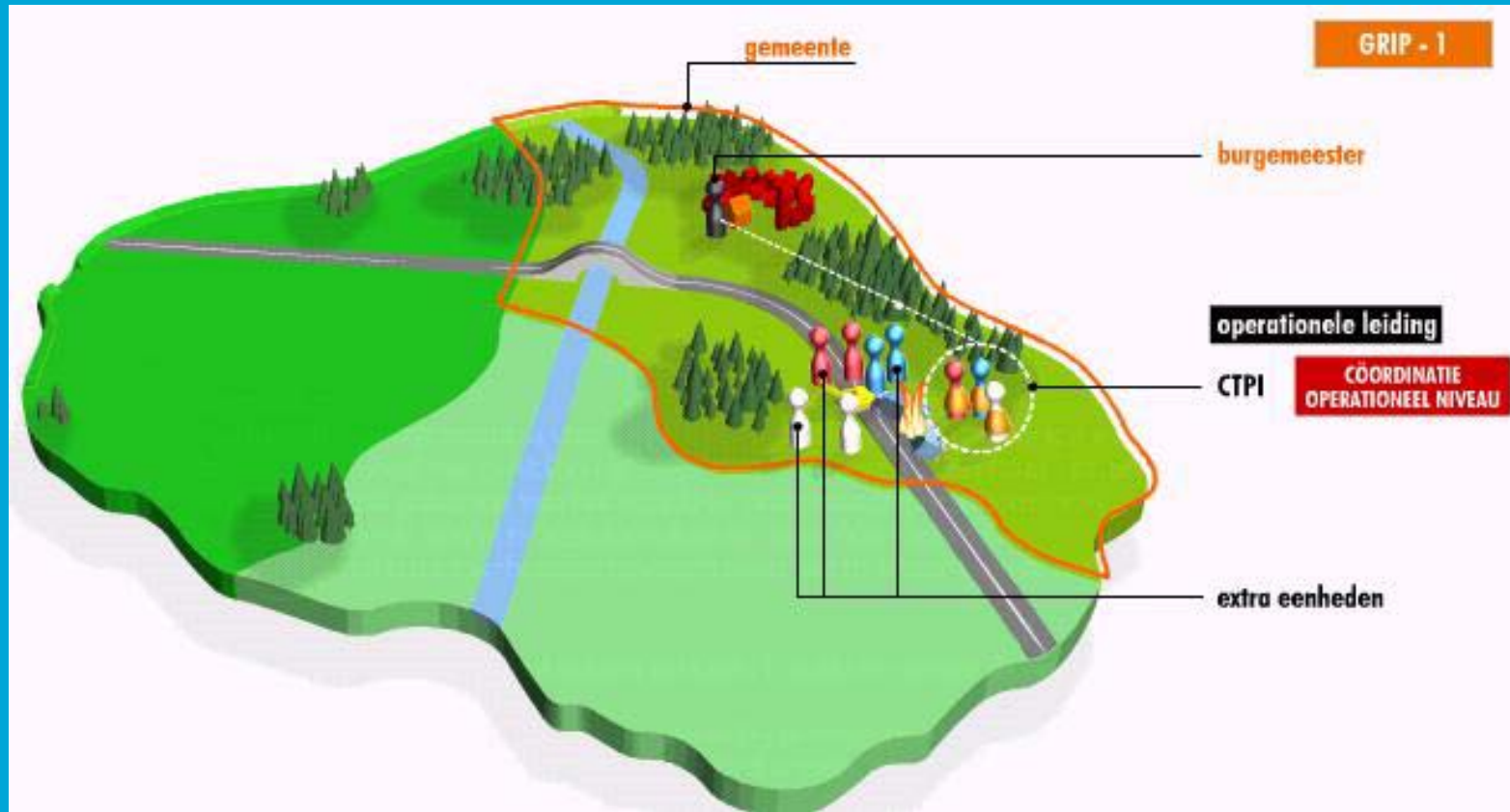
Levels of emergency on land (GRIP)



(picture: <http://www.nifv.nl>)

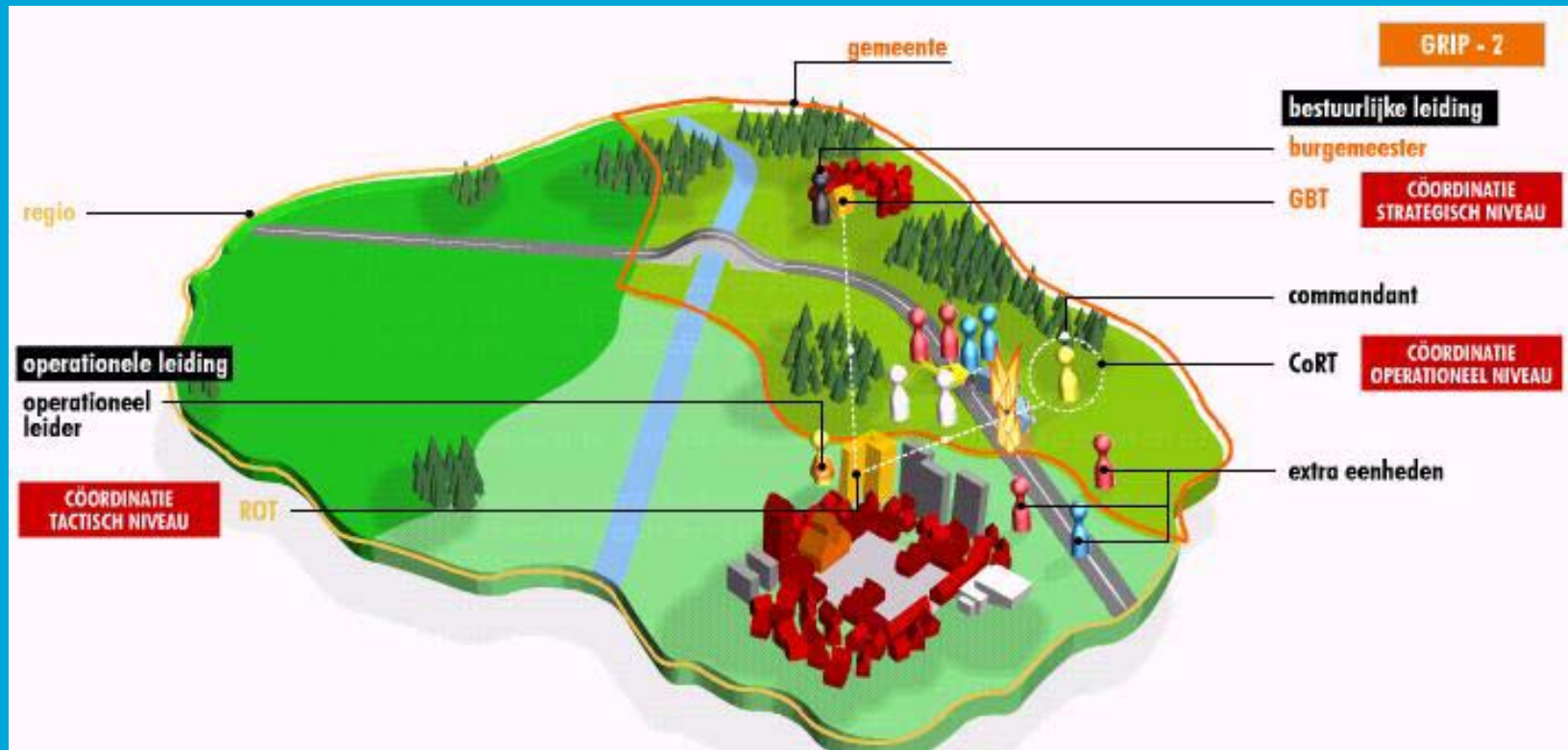
Coordinated
Regional
Incident management
Procedure

GRIP 1



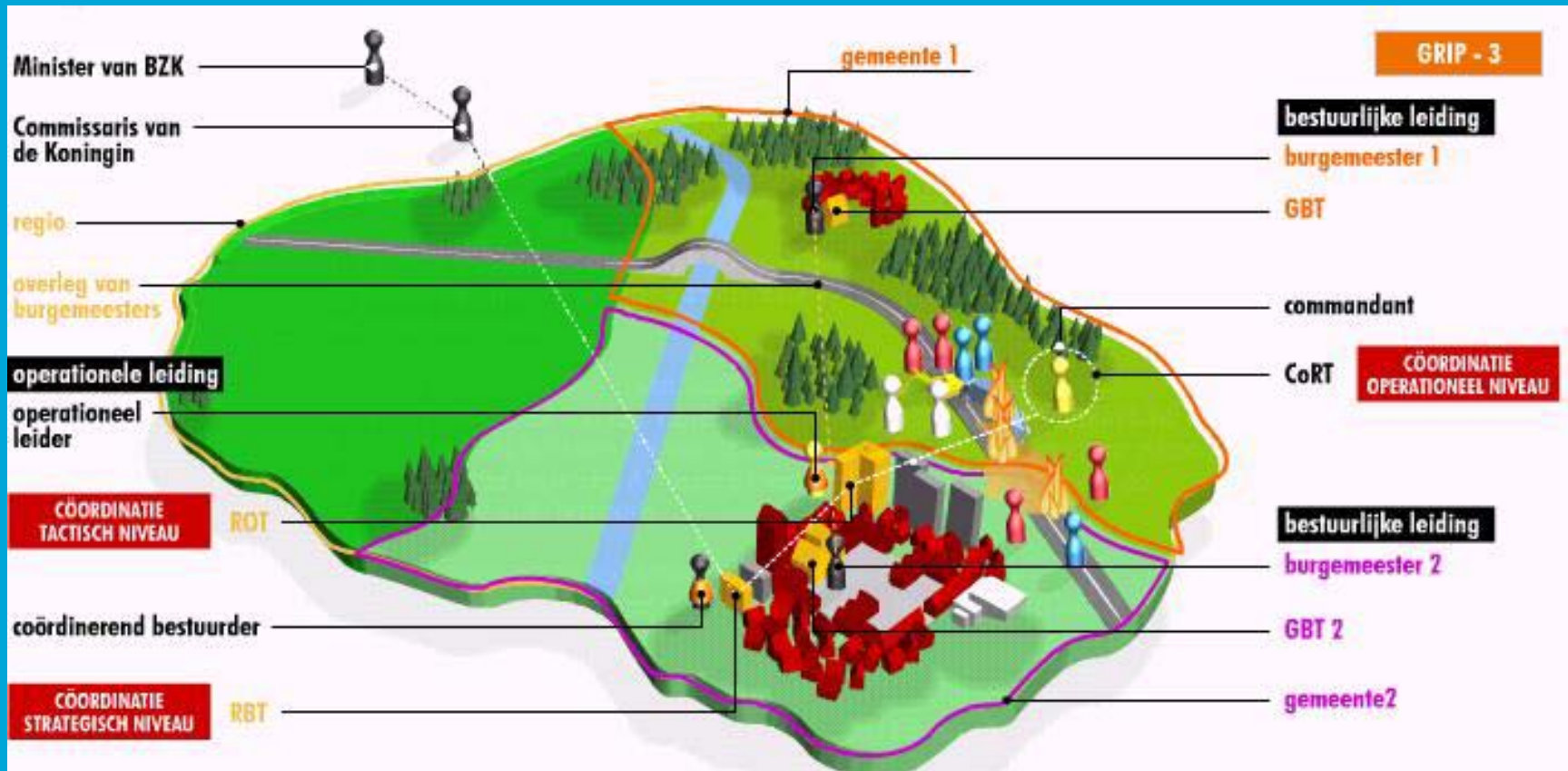
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GRIP 2



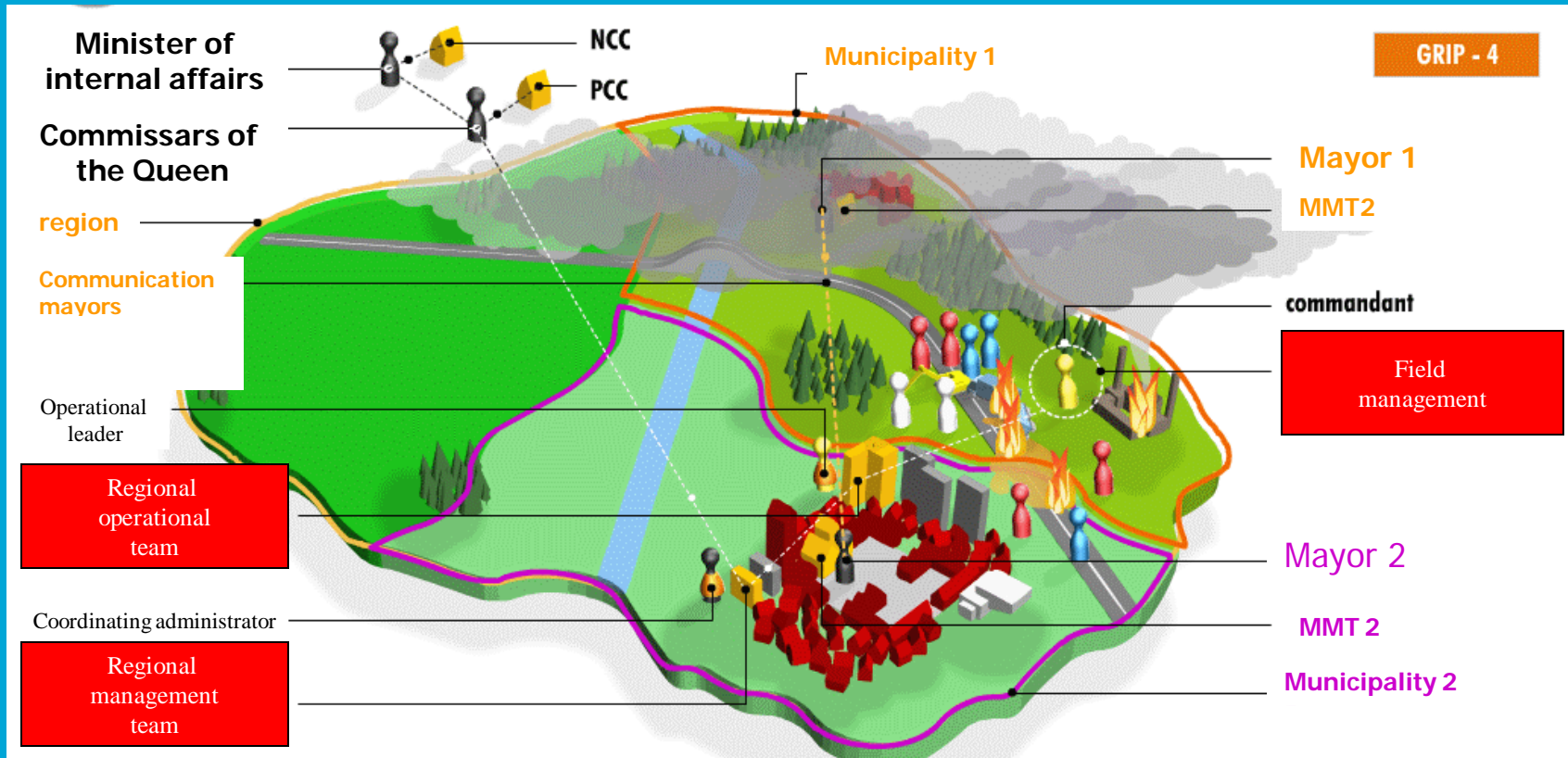
(picture: <http://www.nifv.nl>)

GRIP 3



(picture: <http://www.nifv.nl>)

GRIP 4 (English)



(picture: <http://www.nifv.nl>)

Higher GRIP is not always a big disaster

- GRIP 4: Electricity failure 2005, 2006 in Twente and Zeeland
- GRIP 4: traffic accident (18 July, 2006 Bemmelen) 14 000 gasoline in residential area)
- GRIP 1: frontal crash of two trains (24 June 2006, Maastricht) , 41 injured
- GRIP2: stolen truck with highly toxic liquid (5 March 2007, Helden)

The procedures are defined for the specialists

- Emergency response units in the field, like police, fire brigade, ambulance, red cross;
- Decision-makers, responding to the event and coordinating the work between different teams;
- Consultants, giving advise on specific aspects and issues, for example type of explosives;
- Victims: serious injuries that will be transported by specialized transport or have to stay in locally organized first aid centers;
- Relatives
- Journalists;
- General public

Some disasters have special treatment

- Category A

- Power plants (nuclear)
- Nuclear boats
- Military nuclear material

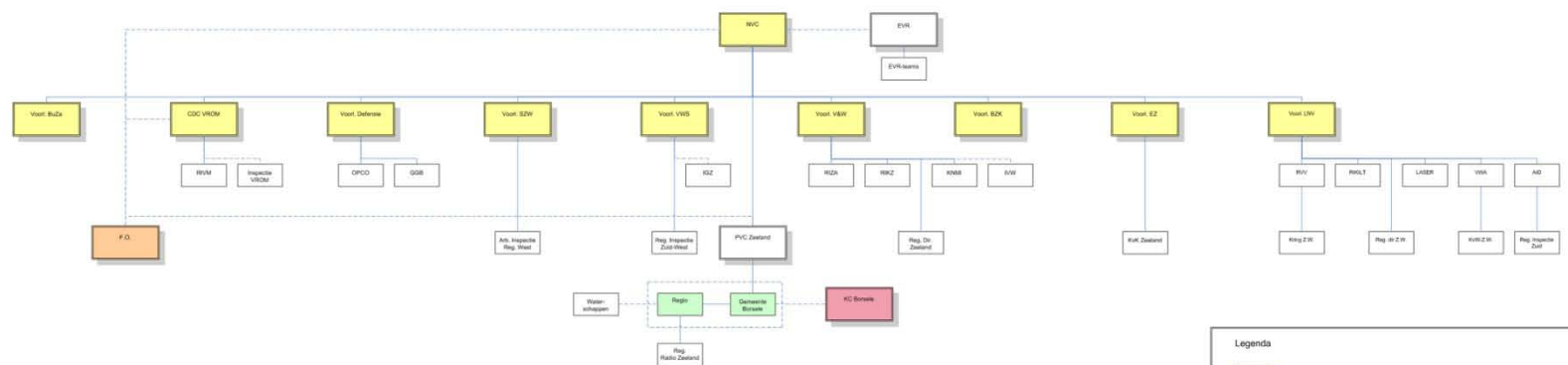
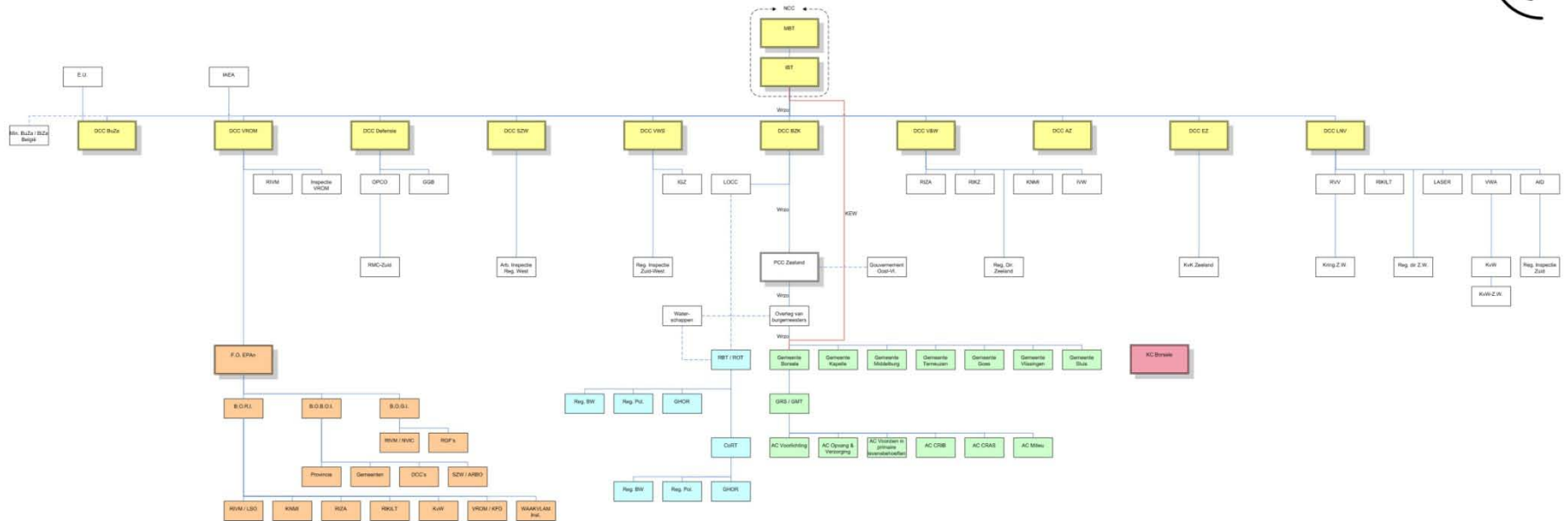
National

- Category B

- Transport
- Laboratories
- Uranium enrichment
- Storage of radioactive material, etc.

Regional / local

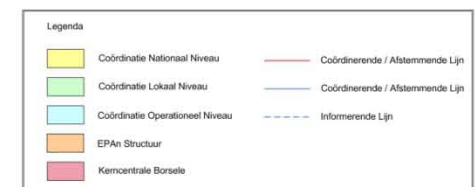
- GRIP 5 in discussion

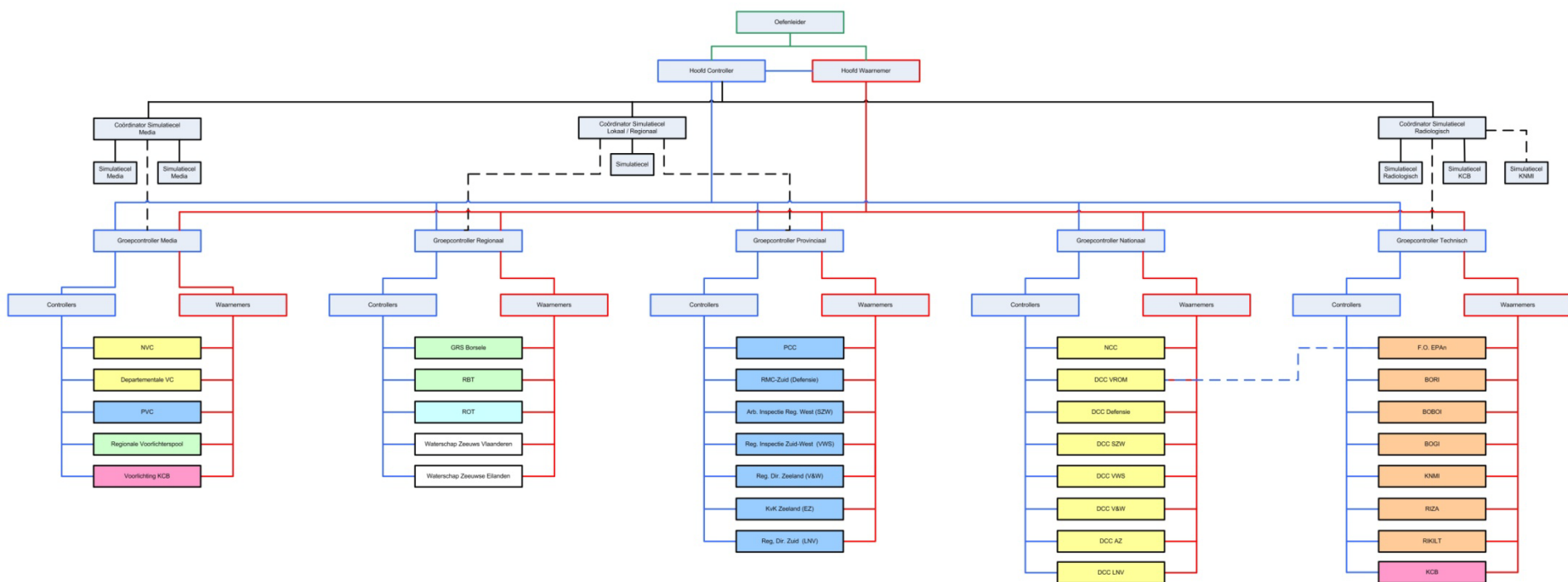


All the institutions involved in a nuclear training

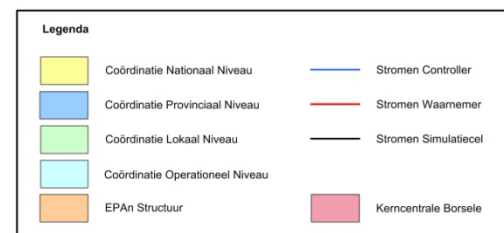
Alleen voor oefenstaf NSOn

Nationale Stafoefening nucleair

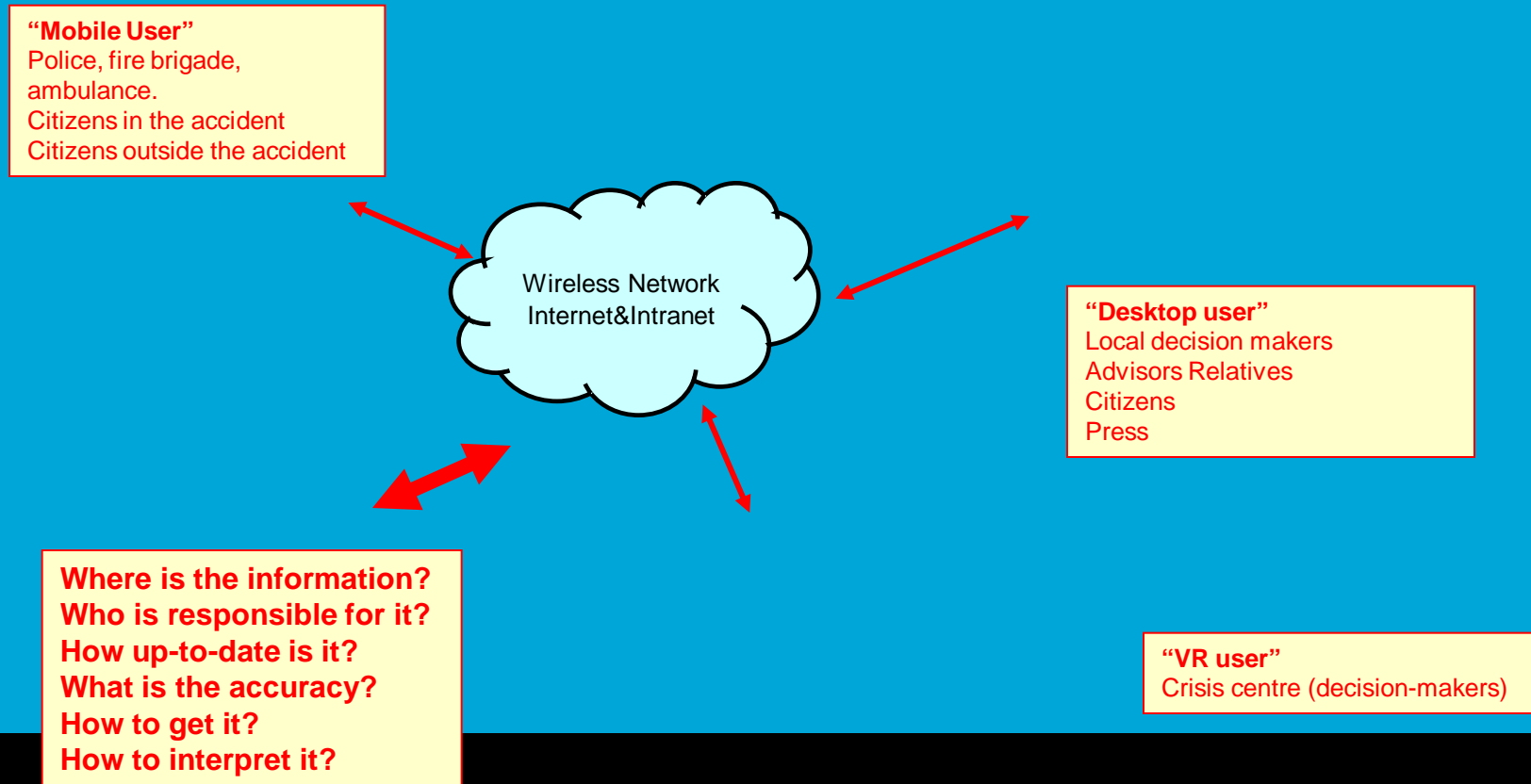




Oefenstructuur NSOn 2005 versie 1.0



The procedures do not deal with technology



Content

- Emergency management
- Processes

Users are involved in specific processes

Alerting	<u>municipality</u>
Source and effect control	<u>fire brigade</u>
Advice and information	<u>municipality</u>
Alerting the population	<u>municipality</u>
Clearance and evacuation	<u>police</u>
Fencing off disaster area	<u>police</u>
Traffic control	<u>police</u>
Maintaining the legal order	<u>police</u>
Decontaminating people and animals	<u>GHOR</u>
Decontaminating vehicles and infrastructure	<u>fire brigade</u>
Collecting contaminated goods	<u>municipality</u>
Preventative public health and medical/environmental measures	<u>GHOR</u>
Medical aid chain	<u>GHOR</u>
Relief and care	<u>municipality</u>
Registration of victims	<u>municipality</u>
Identification of fatal casualties	<u>police</u>
Funeral arrangements	<u>municipality</u>
Observations and measurements	<u>fire brigade</u>
Giving directions	<u>police</u>
Making accessible and clearing up	<u>fire brigade</u>
Care/logistics of disaster recovery staff	<u>fire brigade</u>
Primary needs victims	<u>municipality</u>
Criminal investigation	<u>police</u>
Psycho-social aid and care	<u>GHOR</u>

GHOR

- Ambulances
- Mobile Medical Team (1+1)
- Trauma helicopters
 - (4+1 B+3 G +SAR)
 - <http://www.traumahelikopter.nl/>
- SIGMA (Snel Inzetbare Groep ter Medische Assistentie, special groups of the Red Cross)
- Hospitals (Trauma centres)



(Picture: <http://www.traumahelikopter.nl/>)



(Picture: <http://www.traumahelikopter.nl/>)

Processes are related

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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Process 13 traffic control is related to:

- 4- disinfection of vehicles and infrastructure
- 10- medical psychosocial help
- 11- clearing up and evacuation
- 12- removing and guarding
- 16- guiding
- 18- informing
- 19-taking care of

'Polder crash'

- General supporting processes
 - Registration and reporting
 - Logistic of recovery staff
 - Communication
- GHOR
 - Process 8: medical aid
 - Process 10: psychological aid and care
- Municipality
 - Process 18: advise and information
 - Process 19: relief and care
 - Process 21: registration of victims
 - Process 25: follow-up care



(Photo: www.webregio.nl)

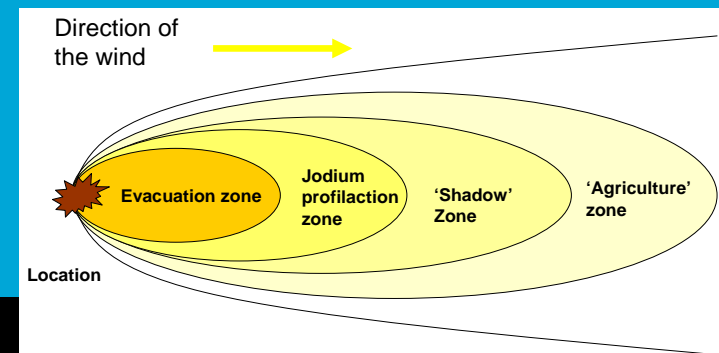
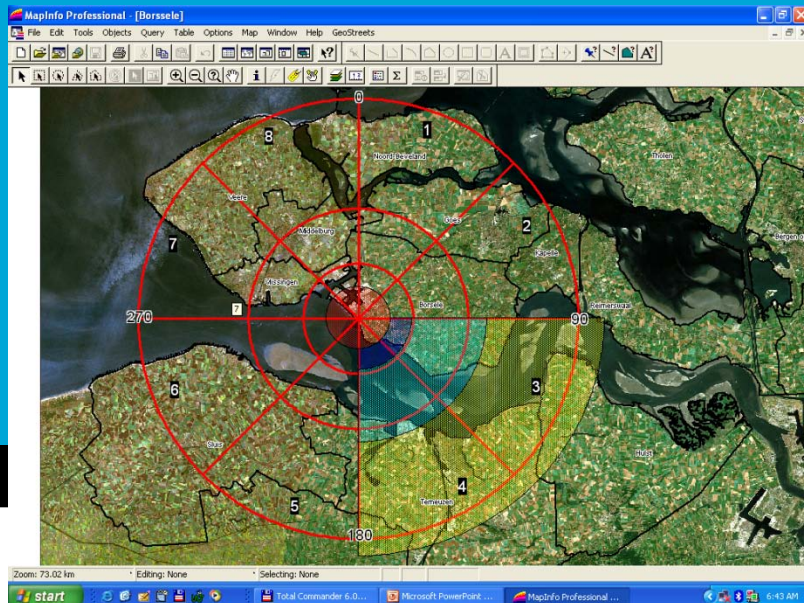
How it works?

- Example with observations and measurements, but first what can go wrong

Example of process: 'measurements and observations'

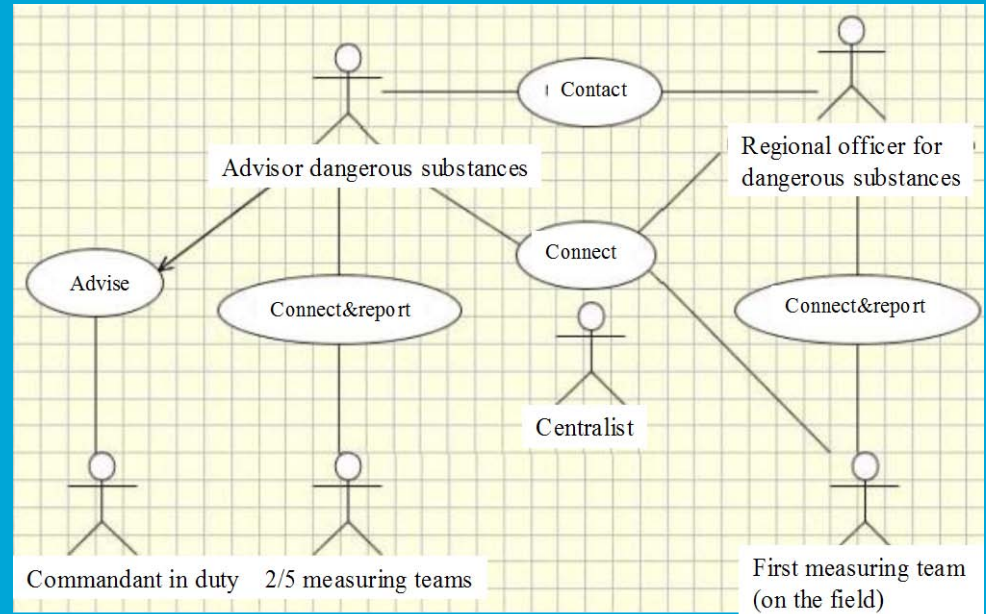


1. Centralist receives location
2. Places sector template
3. Direction of the wind
4. Measuring teams
5. Creation of plume



(<http://www.geodan.nl>)

UML: Activity, use case diagrams



A model to maintain dynamic information

Training 'Arnhem'



- Accident with a train
- Train how to work with many casualties
- A person under the 'destroyed building' was found after 4 hours



Training 'Arnhem'



Training 'Almere'



- Accident with a ship
- Train how to cooperate together
- Numbers with casualties when wrong

Training 'Almere'



Emergencies in YouTube

- Where is the fire?
- <http://www.youtube.com/watch?v=03tDjeTSAB0&feature=related>
- How to approach
- <http://www.youtube.com/watch?v=5-xN0f1rSeQ&feature=related>
- New year
- <http://www.112-almere.nl/news.php?extend.604>
- All in a line
- <http://www.youtube.com/watch?v=KgGSaKcNub4&NR=1>