



**KAPPETIJN**

SAFETY SPECIALISTS

# PPP-organizations in port- and industrial areas

*Kees Kappetijn & Philip Stohr*

*Joiff AGM, November 11, 2015*

# Kees Kappetijn



## Career

1992-1998: Municipal & Regional Fire Brigade Rotterdam

1998-2007: Consultancy Van Dijke / AVD Group

2007-2012: Falck Risc

Aug 2012: Independent consultant industrial safety



Personal “red line” in the past 24 years: BRZO, PPP & art. 31 trajectories:

- Helping governments assess and test company fire reportings
- Helping industry making fire reports and make them EPR-suitable
- Considering fire fighting alternatives together (flexible vs fixed facilities)
- Developing emergency services with joint tasks, possibly in a PPP-context
  - Rotterdam, Chemelot, Amsterdam, Moerdijk
- Evaluating regulations and advising ministries about adjustments
- Project leader for joint government and industry project team for Dutch national Guideline on Corporate Fire Brigades 2010
- Conducting lawsuits if there really is no other way...

More information? Visit: [www.kappetijn.eu](http://www.kappetijn.eu)

# Philip Stohr



## Career

2008-2013 Public Administration (Safety Policy), Nijmegen University;

2010-2014 Spatial Planning, Nijmegen University;

2013-2014 Intern at Port of Rotterdam & Royal HaskoningDHV;

Aug. 2014 Kappetijn Safety Specialists.



## Projects (selection)

- Rotterdam Fire Brigade, various projects including: heat radiation contours as attack-frontiers for firefighters and implementation of the Seveso-act;
- Safety Region of North-Limburg (NL), member of incident evaluation committee (fire incident with a big asbestos emission in an urban area);
- Amsterdam Fire Brigade, Support during the construction of an industrial harbor fire brigade (through PPP);
- Kappetijn Safety Specialists: develop workshop for transition of new Seveso-legislation to implemented by industry and safety regions

More information? Visit: [www.kappetijn.eu](http://www.kappetijn.eu)

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# Part 1.

## What to prepare for...

# How the discussions started...



A nice, friendly industrial harbour with some ambitions...



# How the discussions started...



...and what often is forgotten or ignored!

# What to prepare for (1)



Buncefield 2005  
No casualties (Sunday morning)  
5 billion financial effect  
Enduring disruption society

Credible scenario for  
Ports & industrial estate:

- Process & storage fires
- Chemical spills
- Ship fires
- Several casualties

Tianjin 2015  
>145 dead (88 fire fighters)  
Hundreds injured  
Enduring effects of chemicals



# What to prepare for (2)



## Industrial fire fighting and hazard management in harbours:

- Large process and tank storage fires
- Flare & Sphere fires
- Chemical spills
- Pipeline & Transport accidents (trucks/rail/vessels)
- Explosion scenario's
- Ship fires, tankers, barges, cruise ships

Incidents with larger external effect,  
often larger damages outside site,  
casualties involved to neighboring  
companies and public domain &  
infrastructure

Scenario's in the area risk profile that  
need joined action from industries and  
public services:  
Credible industrial scenarios

## Part 2.

# What to organize...

# What to organize... (I)

Zipper-dilemma (public aid services and industry prepare individually)

## Individual industry

SOP's, SAM-G's, alarm & scaling

Basic skills operators, fire fighters, calco's

**Crisisrooms &  
dispatchcenter**

Object-mapping, firewater plans,  
attack-plans

**communications**

Vehicles, pumpers, rescue-equipment

Recovery & continuity plans

## Public aid services

Alarm & scaling

Available units firefighting, ambulance & police

Setup and output of standard units & vehicles

**Training & Education,**

Communication & connection to public  
alarm center

Preplanning, disaster management plan

Structure crisis management organization

Coverage plan with response targets

# What to organize... (II)

Zipper-dilemma (public aid services and industry prepare **together**)

## Individual industry

Alarm & scaling structure for larger incidents

Emergency response plan (local)

Vehicles and equipment with clear performance standards

Education and training (individual on site + joint with partners)

Use of uniform standards

Address the applicable authority

Implement & deliver what is required

- QRA
- Safety management system
- Safety-report
- Fire safety plan

## Public aid services

Basic set-up for emergency response

Emergency response plan (area)

Vehicles and equipment , additional on industry

Education and training, individual on fire station, joint with partners

Position in preplanning

Legislation & standards applicable for all

Create clear governance-model

Authorities act transparent & predictable

Position in legislation

# What to organize... (III)

## Challenges



### Current challenge for industry and public aid services:

- Get stakeholders at the table with actual interests
- Develop and dimension an organization that focusses on industrial and harbour scenario's;
- Find a model that maximizes operational quality for all stakeholders and is acceptable for both industrial and public partners;
- Define the threshold(s) for guaranteed capabilities (number of stations, people on watch, vehicles and output, responsetime, synchronicity of alarms etc;
- Define cost (Capex & Opex) and financial distribution model.





# Cluster Haven



IJsbrand



Osdorp



Teunis

# Part 3.

## Public Private Partnership: Models in the Netherlands and abroad

# PPP: Models in the Netherlands and abroad (I)



## 4 main models in Netherlands

### PPS-variant 1: Model GB R'dam

Public and industrial partners:

- join forces;
- start separate and dedicated legal entity;
- dimension solid governance;
- jointly manage an organization with people, assets, vehicles and buildings.

### PPS-variant 2: Model Moerdijk

Public and industrial partners:

- join forces;
- use the legal entity of the safety region (public) as “carrier” of a harbor-unit of industrial fire fighting.
- Develop special platforms for collective management and payment by the industry

### PPS-variant 3: Model Petten

Public and industrial partners:

- join forces,
- use the legal entity of one of the industrial partners to get both industrial as well as public services,
- with agreements about quality, operational preparedness and finance for public services

### Variation 4: Extending operational services through outsourcing: (model Kijfhoek / Delfzijl)

the actual performance of the services can be outsourced to a specialized service provider, via contract with KPI's .

Responsibilities stay with PPP-partners, execution lies with service provider.

# PPP: Models in the Netherlands and abroad (I)



## Actual safety & port- and industry fire brigades trough PPP (NL):

1. Joint Fire Brigade Rotterdam (since 1998)
2. Fire Brigade Chemelot/DSM (covenant since 1999)
3. Fire Brigade Schiphol, Kennemerland & AFS (since 1999)
4. Training Ground Zuid-Holland South (since 2005)
5. AMAS/AYMA Amsterdam (since 2008)
6. Fire Brigade NRG/Petten (nuclear facility, renewed since 2012)
7. Fire Brigade railway yard Kijfhoek (since 2011)
8. Port Fire Brigade Moerdijk (since 2013)
9. Platform Industrial Incident Control/PII (since 2013)
10. Joint Ambulance service Rotterdam Maasvlakte (since 2011)

PP-Partnerships & mutual aid for industrial safety, fire & rescue are everywhere!

# PPP: Models in the Netherlands and abroad (II)



## Running PPP-developments in NL:

1. Port area Amsterdam
2. Chemical park Delfzijl (possible combination with Eemsmond/Eemshaven) (letter of intent June 2015)
3. Port area Vlissingen/Borsele (Sloehaven) and port area DOW/Terneuzen (ports at opposite sites of Westerschelde)



# PPP: Models in the Netherlands and abroad (IV)

## Rotterdam (NL), Joint Fire Brigade



- Surface area: 270 km<sup>2</sup>
- Cluster of chemical industry and transshipment companies
- Rotterdam agglomeration: 1.2 million inhabitants
- 2 main waterways + various harbors
- Highways A15 + A4 & tunnels 6 trainyards with haz mat
- 35.000 sea ships
- 5 refineries, large tankstorage, energy/.LNG
- 60 Seveso-members + municipality Rotterdam
- Equal board membership industry and R'dam
- Annual turnover: 18M€
- 250 fifi, 50 prep, staf and management
- Industry pays 65%



# PPP: Models in the Netherlands and abroad (V)

## Moerdijk (NL), Port Fire Brigade



### Public-Private-Partnership:

- Modelled after the Joint Fire Brigade in Rotterdam
  - Operational execution: Safety region exploits fire brigade units
  - Financials: little over 55% budget by the public, 45% by industry
  - 6 fifi on shift 24/7
  - Industry pay 45%
- 2.500 hectares, 400 comp, 14.000 employed people, 3,5 hours distance from the North Sea
  - Surrounded by inhabited areas, between Rotterdam and Antwerp
  - 13 Seveso companies + fire brigade assignments ex 31Wvr
  - Modes of transport with chemicals
  - Waterway Hollands Diep + highways A16 & A17



# PPP: Models in the Netherlands and abroad (VI)

## Petten (NL), NRG Fire Brigade



- Circa 45 hectares, Research Location Petten: 4 companies, 1500 people
- Nuclear research reactor on-site (45 Mw) + hot cell lab complex (isotopes)
- Fifi team 6 positions 24/7 guaranteed: nuclear task, industry task + regular fifi & rescue
- Agreement with municipality and safety region for public task on site
- Industry pays 100%

# PPP: Models in the Netherlands and abroad (VII)

## Zwijndrecht (NL), outsourced fire brigade



### Assignment situation:

Performance: standard manning of 7, turnout time 6 min,  
24/7 secured, Assignment: to ProRail, Execution: by Falck via ProRail  
Task: fire fighting and hazmat

### Organizational method:

- ❖ 28 people (incl. team leaders) in 4 shifts
- ❖ Industrial vehicle + mobile pumps
- ❖ One fire station (owned by ProRail)
- ❖ Extinguishing water (stationary by ProRail) + foam

- ❖ Railyard for composing freight trains
- ❖ Largest in the Netherlands, big player in Europe
- ❖ Strategic location between the Port of Rotterdam and the European hinterland
- ❖ 5 km long, 50 tracks (400m.) wide & > 100 employees/externals
- ❖ All that is chemical passes daily.....
- ❖ Along A16 highway, in rural area 43.000 inhabitants (Zwijndrecht – H.I.Ambacht)

# PPP: Models in the Netherlands and abroad (VIII)

## PPP & Mutual aid (worldwide)



1. CIMA (Chanel Industries Mutual Aid), Houston, Texas
2. Grangemouth (Scotland)
3. Refinery Terminal Fire Company / RTFC (Corpus Christi)
4. Chemical Valley Emergency Coordinating Organization (Sarnia, Ontario, Canada)
5. Industrial Emergency Services (Baton Rouge)
6. Swedish Petroleum and Biofuel Institute (SMC)
7. Tarragona, Spanje (two industrial areas, North and South (see presentation Lainsa)
8. GMAG, Brisbane Australia
9. PIMMAG, Johor Baru Malaysia
10. NOMAD, Northwest Ohio and Michigan Mutual Aid Organization
11. In Indonesia there is a partnership organization between the state oil company and Joint Ventures (JV's) who combine for training and professional development
12. SECCO, Shanghai China
13. CEFS, East Coast Malaysia (Kerthe area)

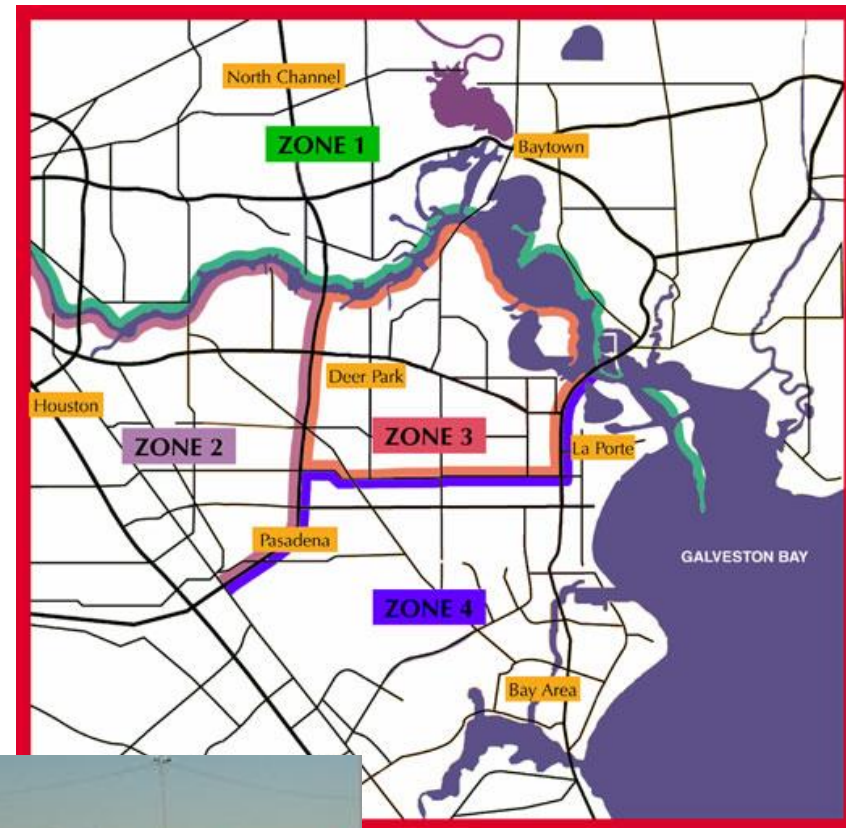


# PPP: Models in the Netherlands and abroad (IX)

## USA (Houston, TX), CIMA

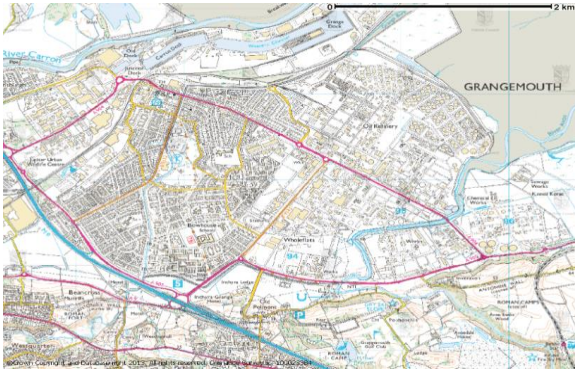


- +/- 100 partners: Industry, (local) authorities, law enforcement agencies (Police & Fire brigade)
- Catchment area: Houston (Harris, Chambers, and Brazoria Counties) also partially the Louisiana area(+/- 500 mile<sup>2</sup>)
- Large neighboring urban areas
- 200 vehicles/equipment/ambulances



# PPP: Models in the Netherlands and abroad (X)

## UK (Grangemouth, Scotland) MICC



- Since 1968: Major Incident Control Committee
- 700 hectares, Ineos Grangemouth in the lead
- Port industry area with petrochemical activities
- Neighboring residential area +/- 20.000 people
- Ineos firemen are trained for: ambulance, altitude rescue, fire and closed spaces.



### Industrial partners

BOC  
BP FPS  
BP Gas  
Calachem UK Ltd  
Calor Gas Ltd.  
Dow Chemicals Ltd.  
Forth Ports Authority plc  
Fujifilm Imaging Colorants Ltd  
HW Coates Ltd  
INEOS Manufacturing Scotland Ltd  
Nustar Grangemouth Ltd.  
Polimeri Europa UK Ltd  
Syngenta Ltd

### Emergency Response Partners

Central Scotland Fire and Rescue Service  
Central Scotland Police  
Falkirk Council  
NHS Forth Valley  
Health and Safety Executive  
Scotland Gas Networks  
Scottish Ambulance Service  
Scottish Environmental Protection Agency  
Scottish Power  
Scottish Water

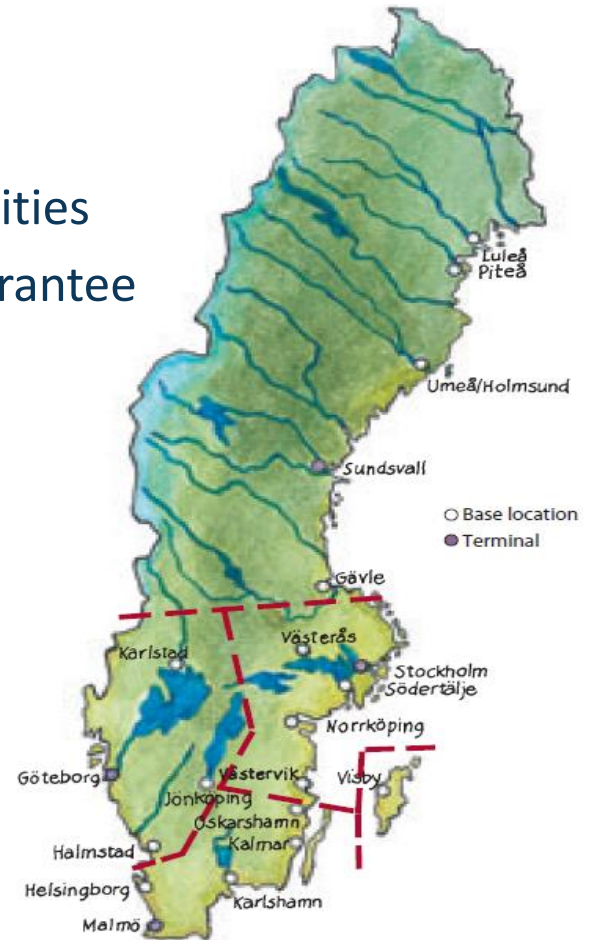


# PPP: Models in the Netherlands and abroad (XI)

## Sweden, SMC



- Släck Medels Centralen (SMC, 1994)
- 4 teams (8 units) aimed at tank fire control
- Stockholm, Gothenburg, Malmö and Sundsvall
- Various (bio) oil companies with the local authorities
- Industry pays for equipment, public services guarantee manning
- Participation forced by national law



Part 4.

Further research  
with the Joiff-community

## Further research with the Joiff-community (I)

### What to look for?



1. Name, place, state/country + **maps**, size in square km/mls/hct, information about industrial risks, infrastructure (road, water, railway), possible residential areas
2. Partners connected with each other in the organization (industry/ companies & public/authorities), try to name them, year of establishment (**logos**)
3. Goal of the organization, what do they do, overview of materials/ vehicles/buildings, how many operational people/service providers involved (**photos**)
4. Governance, structure board/management/direction, staffing/ fulltime-employees (**tables/organograms**), can we speak of outsourcing/special services or not?
5. Deployment over the past years (statistics), special (large) incidents (**photos**)
6. Other activities/services that the organization provides?



## Further research with the Joiff-community (II)

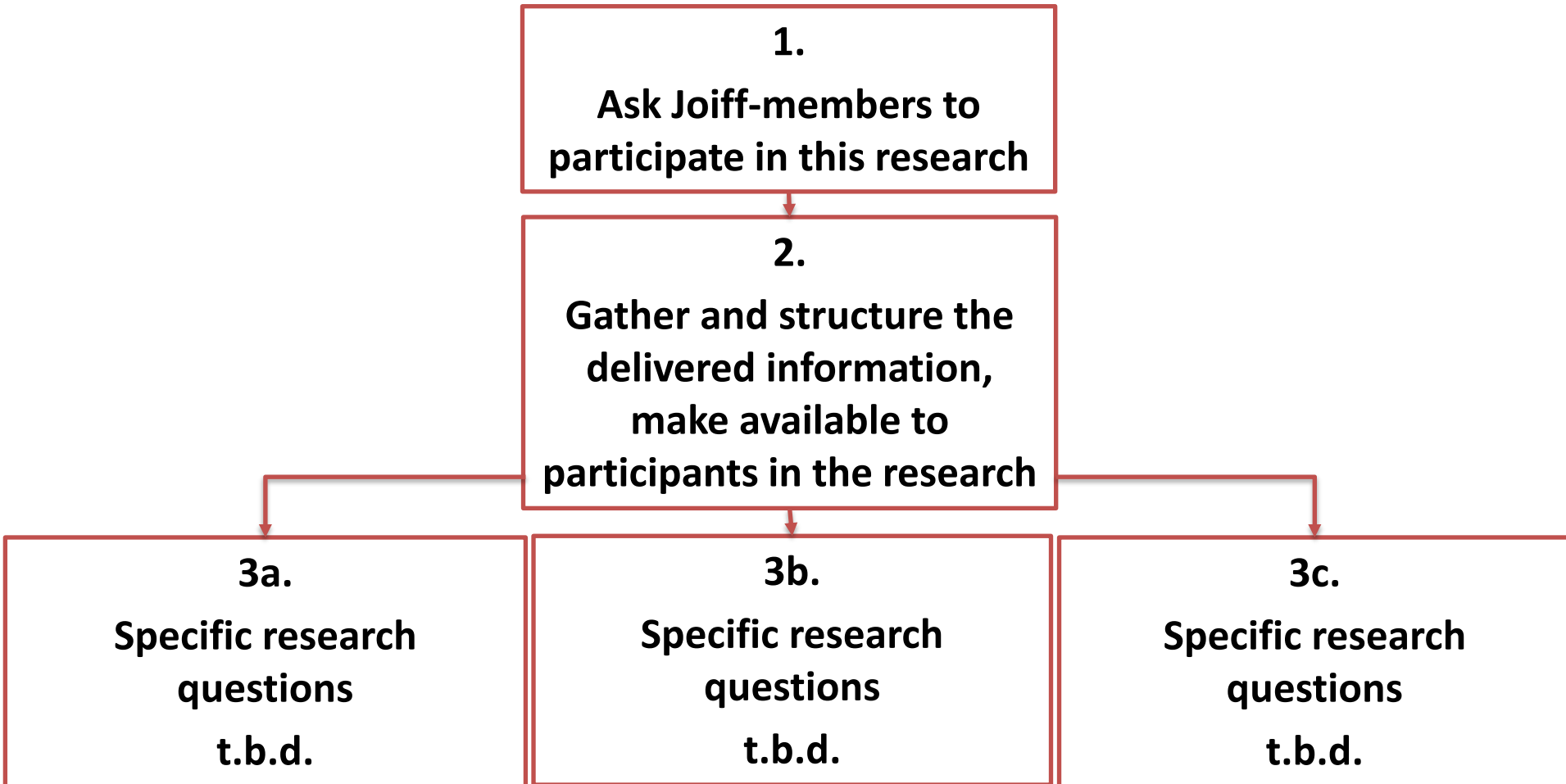
### What to look for?



1. Specific legal backgrounds, national & local legislation on PPP-modelling and safety & EPR-standards, thresholds between authorities as partner and/or inspector
2. Financial household, annual turnover, contribution-model, who-pays-what, VAT-discussions
3. Quality- safety management, KPI's, use of standards
4. Leadership during an incident: who's the boss
5. ???

# Further research with the Joiff-community (III)

## What to look for?



Further research with the Joiff-community (IV)

**What to look for?**



Interesting development?



**KAPPETIJN**

SAFETY SPECIALIST

*Preparing organizations for whats seems  
inconceivable, but is not unthinkable*