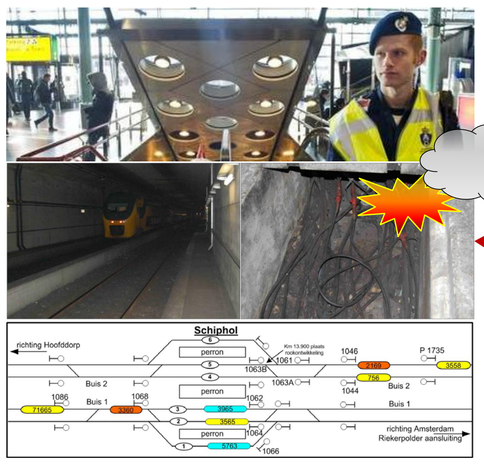
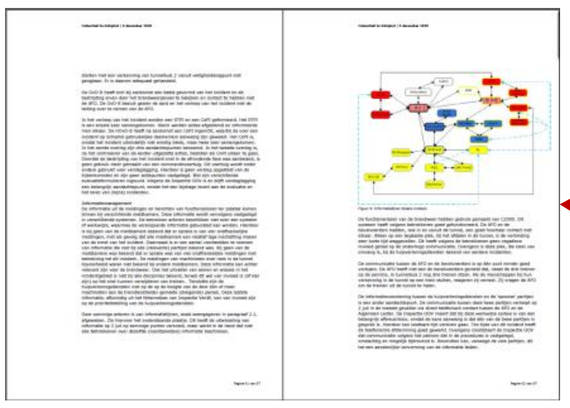
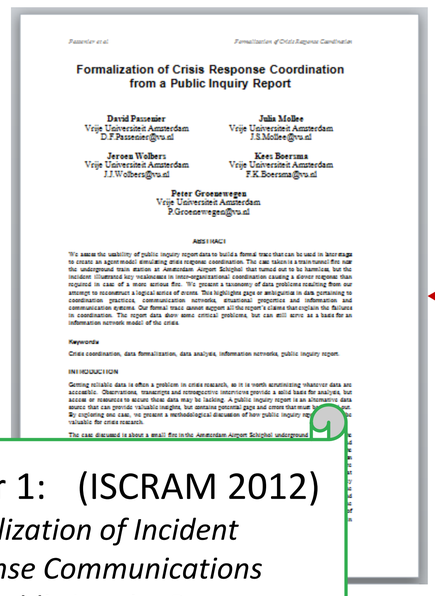
Networks & Crises





Instigated by the case of the 2009 Schiphol train-tunnel fire, we analyze crisis situations from an interdisciplinary perspective. The domain of organization science is merged with artificial intelligence approaches, first by modeling the events of the incident response and second by modeling agents and decision making processes involved in crisis response. Our main data source consist of primary data and secondary data, i.e. reports, which are complemented by interviews with practitioners.



Formalization of Crisis Response Coordination from a Public Inquiry Report

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Paper 1: (ISCRAM 2012)
Formalization of Incident Response Communications from Public Inquiry Reports.

Incident

Report

Paper 5 (EXPECTED)

Matlab Tool

Formal Trace

Knowledge

Theory

Practitioner Interviews

Paper 3 (EXPECTED)

Paper 4 (EXPECTED)

Agent Model

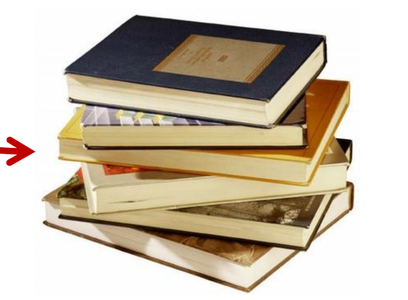
Formal Trace 1

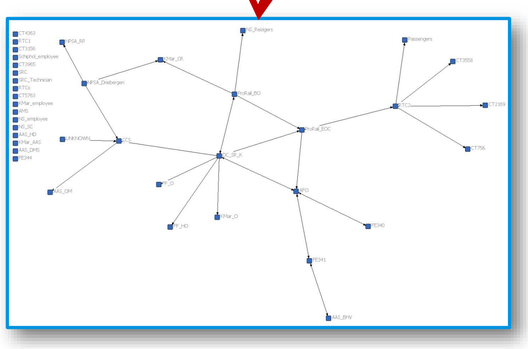
Formal Trace 2

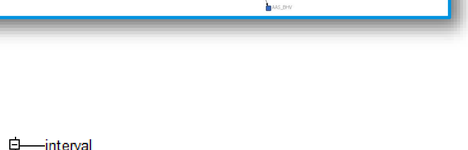
Formal Trace 3

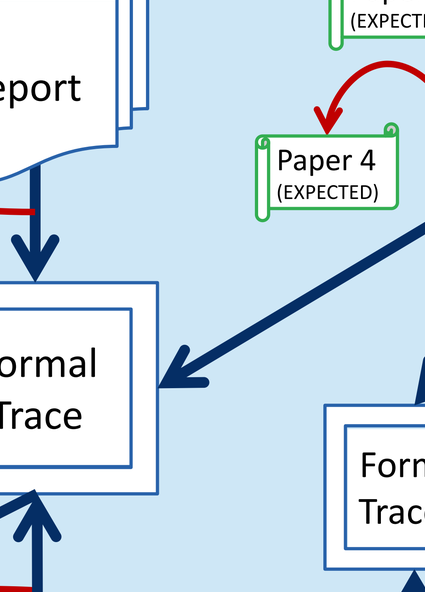
Communication Networks

Evaluation









CRISIS MANAGEMENT EVALUATION: FORMALISATION & ANALYSIS OF COMMUNICATION DURING FIRE INCIDENT IN AMSTERDAM AIRPORT TRAIN TUNNEL

Paper 2: (ECMS 2012)
Formalisation & Analysis of Communication during Fire Incident in Amsterdam Airport Train Tunnel.

Property P1B: Evacuation performed within 15 min at fire location.
For all time points *t1* and *t2*, all AGENTS *a* and *b* in trace γ, if at *t1* there is a fire at location tunnel 2A and there is no earlier time point at which there is a fire at location tunnel 2A, and at a later time point *t2*, AGENT *a* communicates to AGENT *b* that the tunnel is clear of trains, then interval *i* = *t2*-*t1* and *i* ≤ 30.

```
P1B_EVACUATION_PERFORMED_WITHIN_15MINUTES_AT_FIRE_LOCATION ≡
∀γ:TRACE , ∀t1,t2:TIME, ∀a,b: AGENT
state(γ, t1) |= world_state(at_location(fire, tunnel2A)) &
∀t0:TIME < t1 [state(γ, t0) |≠ world_state(at_location(fire,
tunnel2A))] &
state(γ, t2) |= communication_from_to(a,b, sign_clear(trains))
&t1≤t2
⇒
∃i: INTEGER
& i = t2-t1
& i ≤ 30
```

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VU UNIVERSITY AMSTERDAM
LOOKING FURTHER