Artificial intelligence and crisis management in the Brussels-Capital Region

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XXXIst European Days of the State Territorial Representatives
Tirana, Albania

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Vivre Bruxelles en toute sécurité

Crisis management: Today’s key challenges

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The evolving nature of today's crises

Systemic

Affect multiple sectors simultaneously.
Consequences spread rapidly.

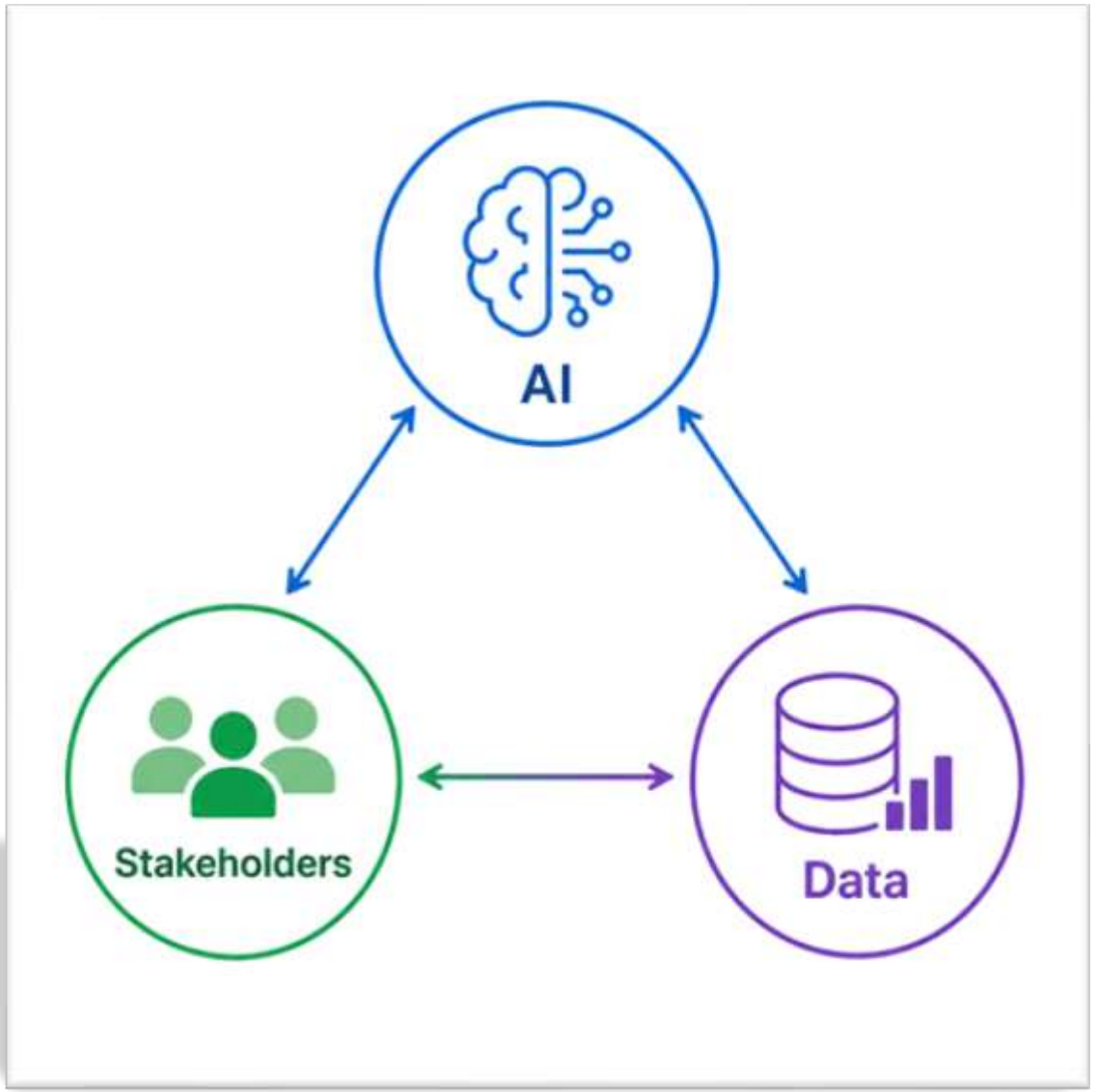
Hybrid

Combine multiple threats.
Their origins are diverse and complex.

Interconnected

Create domino effects.
Mutually reinforcing impacts.


socio-technical system


AI
Stakeholders
Data

Data

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Exponential rise of available data worldwide

Example : Library of Social Sciences Simone Veil (ULB)

Each building can be characterized by a wide range of data.

- **Is it located in an urban heat island?**
- **Is it situated in a flood-prone area?**

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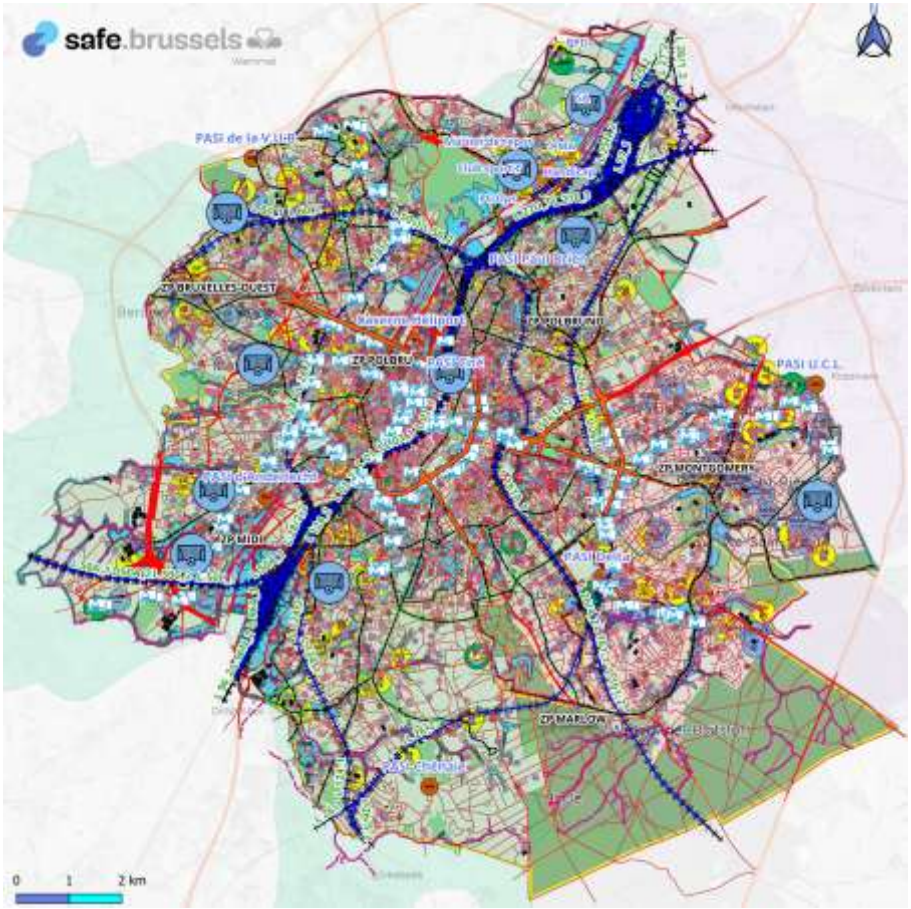
Brussels: A complex web of data to cross-reference

- Public transport hubs / stations
- Prisons
- Large scale events
- Schools
- Hospitals
- Elderly care facilities
- Nurseries
- Critical and sensitive infrastructures (NATO, European institutions, football stadia, Seveso sites, etc.)



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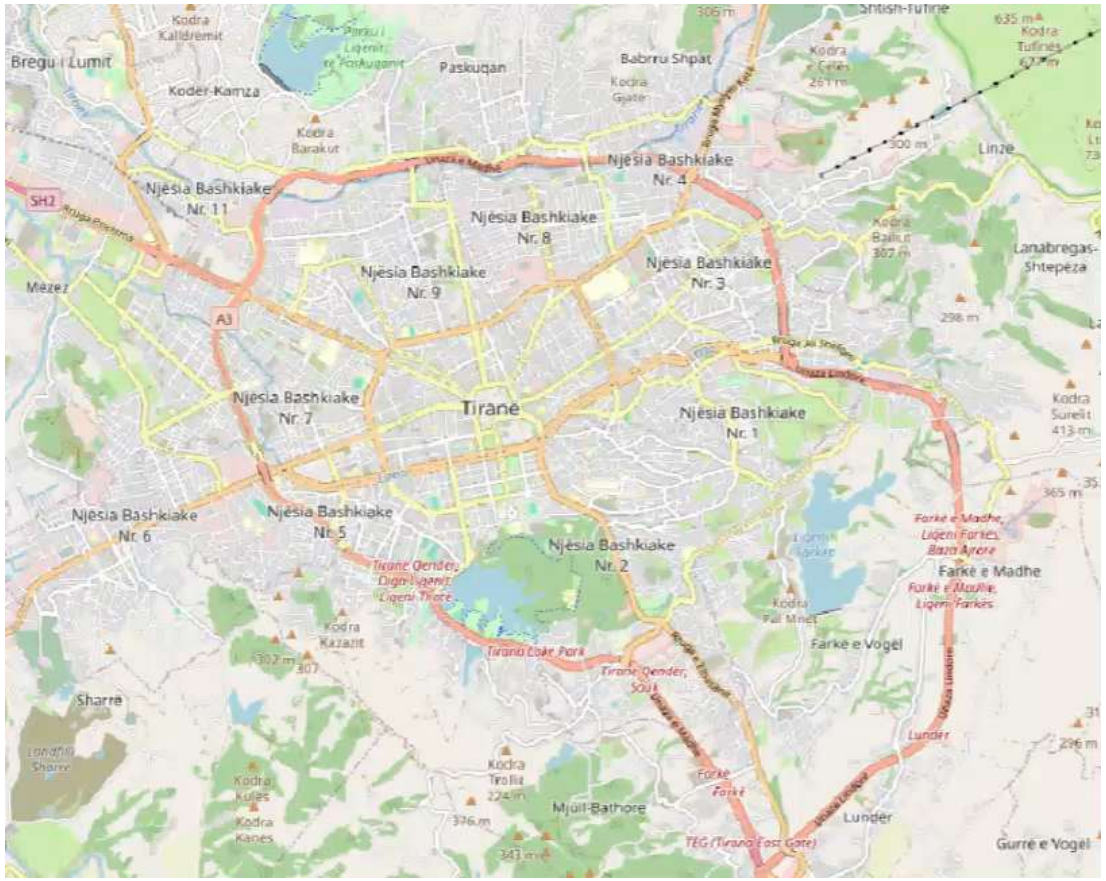
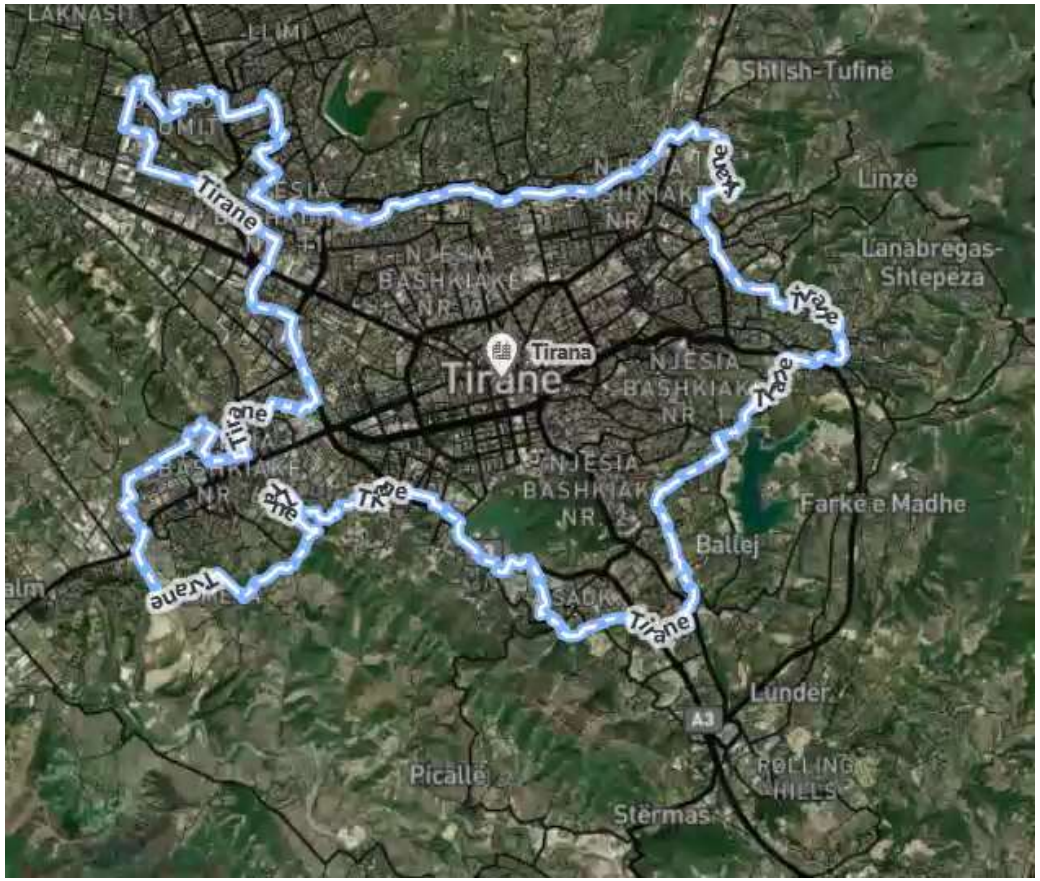
Example: Tirana, Albania





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Ensuring the production and management of high-quality data

Raw data

Structured data

Artificial Intelligence

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Artificial Intelligence

What can AI do ?

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PREPAREDNESS

Anticipate, prepare and reduce risks

WHAT AI CAN DO

Scenario simulation for crisis preparedness exercises

AI simulates multiple crisis scenarios to test plans, identify gaps and optimize resource allocation.

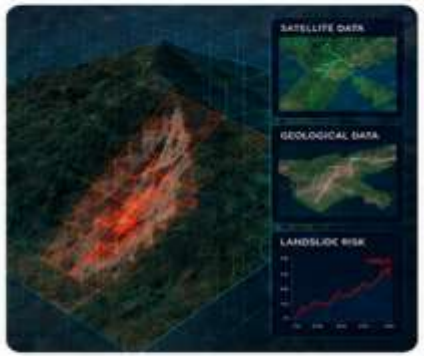
Wildfire monitoring with AI-powered camera networks

AI analyzes live video feeds from camera networks to detect smoke and fires early and trigger alerts in real time.

Data sharing for flood monitoring through conversational agents

Conversational agents provide real-time flood updates, share critical data and guide citizens with reliable information.

Landslide forecasting using satellite and geological data



AI combines satellite imagery and geological data to predict landslide risks and support early decision-making.

RESPONSE

Act faster, save lives and coordinate

WHAT AI CAN DO

UAV/drone-based damage assessment with computer vision

AI analyses aerial images to rapidly detect and assess damage and prioritize response efforts.

Real-time crowd monitoring and management

AI monitors crowd density in real time to manage flows, prevent incidents and improve safety.

AI-assisted emergency call handling and triage

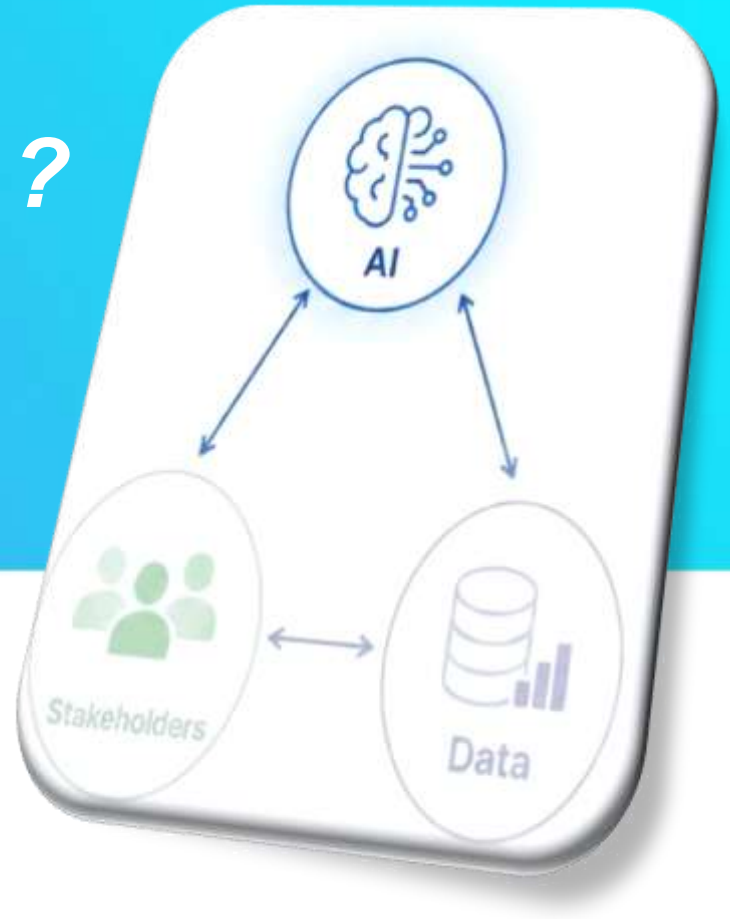
AI transcribes calls, identifies urgency and helps dispatch the right resources faster.

AI-powered decision support tool for crisis management

AI analyzes data and provides actionable insights to support faster, more informed decision-making.

Artificial Intelligence

What are the risks and limitations of IA ?



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RISKS OF AI USE IN CRISIS MANAGEMENT
Not suited to limited data or rare events
Risks linked to the use of non-sovereign AI systems
Cyber risk
Reduction in human cognitive and moral expertise
Reduced public trust in decision-making by authorities
Hallucinations (inaccurate or misleading responses)

Crisis management stakeholders

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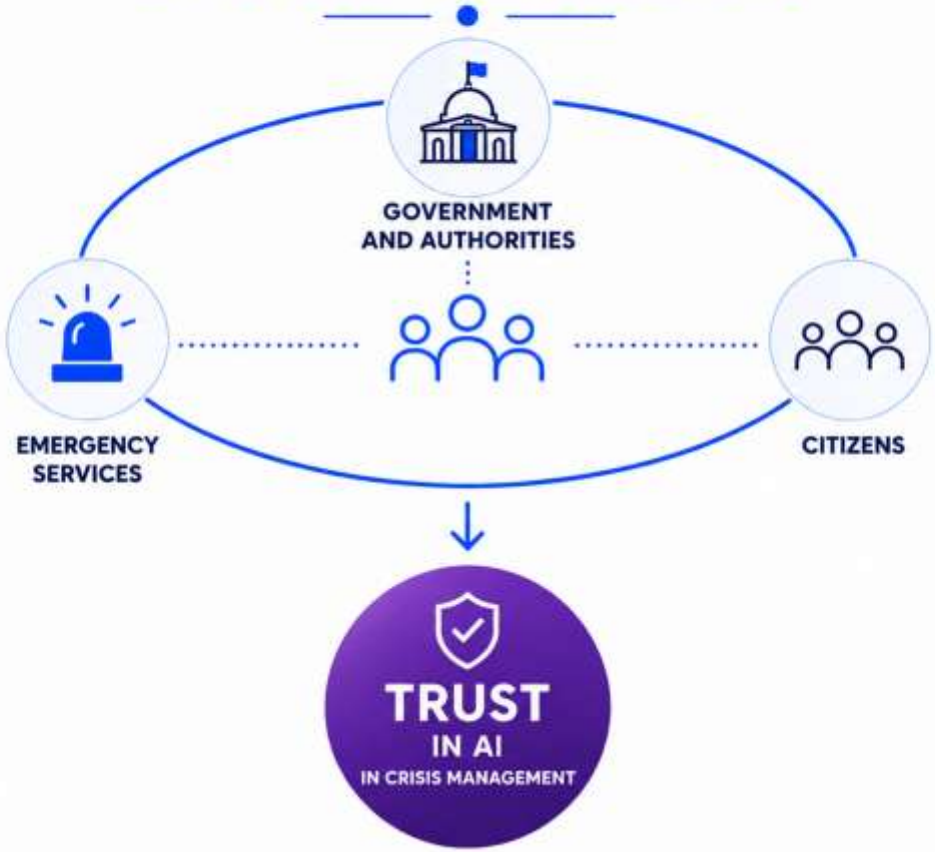
STAKEHOLDERS
IN CRISIS MANAGEMENT




RELIABLE
AI SYSTEMS
TRANSPARENCY
FORMATION
ET EXERCICES
TRUST
IN AI FOR
CRISIS MANAGEMENT
PARTAGE
DE DONNÉES
DATA PRIVACY
& ETHICS
CONTINUOUS
EVALUATION

Use case for the Brussels-Capital Region

Use of AI for mass evacuation

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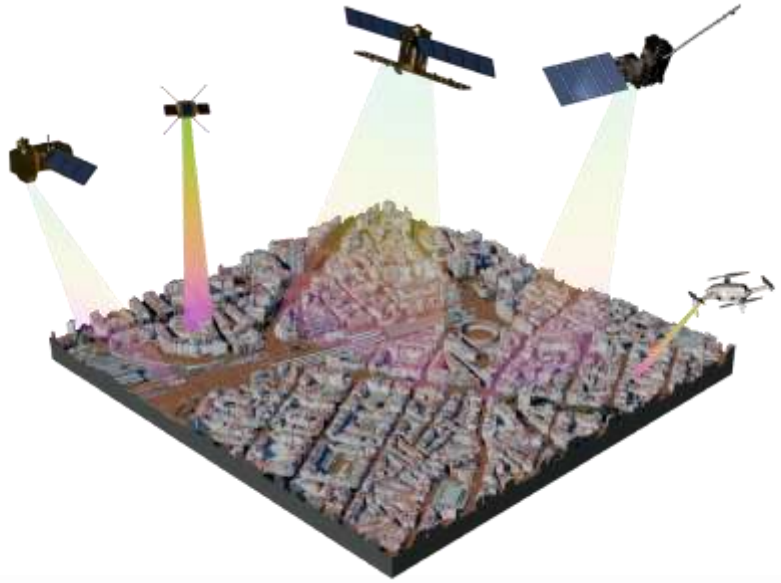

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Conclusion

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It is better
to take change
by the hand
before it takes you
by the throat.
WINSTON CHURCHILL
AI