The aim of this track is to bring together state-of-the-art works on crisis information systems that are supported by ontologies, semantic models and Artificial Intelligence (AI) methods, exhibiting some degree of automated intelligent behaviour. Providing adequate information management and decision support during a crisis situation is a critical requirement for the design of crisis information systems. Acquiring, filtering, organizing, representing, reasoning with as well as distributing relevant information to the right stakeholders at the right time and in the right format is challenging. AI-infused systems or Intelligent systems provide a potential solution to manage this complexity, for example by transforming unstructured data into a structured form of actionable knowledge to provide decision support.

AI-infused systems will display some ability to reason, perceive, learn or act intelligently in their environments; and they may have proactive, reactive, autonomous and/or social aspects. Techniques from Artificial Intelligence (including Machine Learning, Knowledge Engineering, Natural Language Processing, Computer Vision, Semantic Web, Knowledge-base Reasoning, Cognitive Computing) and associated computational domains can help develop effective crisis information systems. This track welcomes contributions to the theory, methodology and practice of developing and evaluating intelligent systems in the context of crisis response and management.

The track draws upon and merges two ISCRAM AI groups that organized and attended the tracks “Intelligent and semantic web systems” and “Knowledge, semantics and AI for risk and crisis management” at the ISCRA 2019 conference. The final goal is to build an AI community of ISCRAM.

TRACK FORMAT

The chairs of this track plan to apply a selective and interactive review process. We plan to make authors and reviewers discuss and exchange comments on the paper in
order to improve the quality of the manuscript before the camera ready for the accepted papers.

We intend to have an additional format for track organization along with the standard paper presentation to encourage the discussion on the state of the art in the field to help crisis management. We propose a debate format during a presentation, where a dedicated reviewer (one of the other presenters in the track session) would moderate questions to challenge the effectiveness of the system for the crisis domain, instead of only the technical advancement discussion (as presented in the paper.)

**TRACK TOPICS**

The following topics are proposed but not limited to:

- Adaptive and self-organizing systems
- Agent based modeling and social simulation as a decision making tool
- Analysis, prediction, planning, preparation, and response in crisis and emergency scenarios
- Application of AI and semantic technologies in the following sectors: disaster management, terrorism, natural hazards, chemical hazards, public safety, smart cities resilience, etc.
- Applications based on blockchain and distributed ledgers technologies
- Applications of the Semantic Web and linked data to crisis management
- Automatic negotiation of trust and analysis of provenance information
- Big data analytics and management in crisis management
- Case studies featuring the application of AI techniques
- Communication and discussions analysis
- Communication infrastructures, technologies and services for crisis management
- Cooperative decision-making
- Coordination, collaboration and decision support technologies and systems for crisis management
- Crisis and emergency knowledge engineering
- Decision making under uncertainty
- Development and applications of ontologies and knowledge graphs for crisis management
- Evacuation and rescue geo-planning
- Geo-Information technologies for crisis management
- Human-AI interaction and human-aware AI for crisis management
- Humanitarian logistics
- Intelligent agents and distributed problem solving
- Intelligent behaviour in wireless sensor networks
- Intelligent context-aware modelling and processing
- Intelligent mapping
- Intelligent training systems
- Intelligent user interfaces
- Interoperability in crisis management
- Knowledge graph

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http://drrm.fralin.vt.edu/iscram2020
- Knowledge map and visualization
- Knowledge representation, discovery and reasoning
- Machine learning and deep learning applications
- Machine learning and deep learning applications for crisis management
- Meta-models for crisis
- Modeling and simulation tools for crisis and disaster situations
- Multi-agent systems for emergency simulation
- Ontologies for crisis and/or risk management
- Optimization and heuristics
- Participatory activities in crisis management
- Planning and scheduling
- Prediction and early warning systems
- Process mining
- Querying and filtering on heterogeneous, multi-source streaming disaster data
- Reasoning with uncertainty in crisis management
- Rescue robotics and Humanitarian UAVs
- Resilience engineering
- Risk, damage and loss assessment
- Rule and case based reasoning
- Semantic web
- Situation awareness
- Smart cities and smart environments
- Smart cities resilience
- Social intelligence
- Social media for crisis management and participatory activities
- Social semantic web
- Text mining
- Vision recognition

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