

Simulation using artificial intelligence in training senior crisis staff members and in validating contingency plans.

The Greater Paris Region and MASA Group have been working alongside to test contingency plans with the artificial intelligent simulation platform MASA SYNERGY. As a result these contingency plans were updated. In a second stage, senior crisis staff, emergency services personnel and the private sector were trained to deal with the impact of this contingency - in this case a major flooding of the Greater Paris Region.

RISK	ACTION	IMPACT	OUTPUT
<p>Disaster contingency plans are complex documents containing a great number of assumptions based on voluminous data. Testing these assumptions can support greater success of the plans.</p> <p>Today most of disaster management preparation is done through board games, tabletop exercises, role-playing and through the writing of emergency plans. While this is an accepted practice, there is great reliance on assumptions. While this may be effective for straightforward incidents, it can be improved upon for complex scenarios.</p>	<p>MASA SYNERGY offers the possibility to process multitudinous assumptions through an artificial intelligence engine resulting in a reliable and validated plan. Users can also make what if analyses trying out alternative response strategies for the same incident.</p> <p>Realism and accuracy are critical when training senior crisis staff. MASA SYNERGY artificial intelligence simulates the propagation of the disaster; and its impact upon people and infrastructure. It also simulates the actors involved, both the victims and the emergency responders.</p>	<p>Contingency plans that are accurate, providing real statistics, figures and a realistic approach towards prevention and reaction to a disaster.</p> <p>Senior Crisis staff are trained in a realistic and interactive environment, giving them plenty of possibilities to try out and test different response strategies.</p>	<p>MASA SYNERGY is a Commercial Off the Shelf Software product, relying heavily on artificial intelligence when simulating disasters and major emergencies. Since every contingency plan and every disaster is, however, location specific, custom data sets must be used in for different locations and types of disasters.</p>



Propagation of the flooding (left screen) and impact on the critical infrastructure (two right screens)

Lessons Learned Until now training of senior crisis staff and validation of contingency plans were typically based on assumptions that never had been put to the test. MASA SYNERGY generates accurate statistics and figures based on very realistic simulated disaster situations.

BUSINESS CASE

The propagation of the disaster; the impact that it has on people and infrastructure; and the execution of high level orders by the subordinate levels are replaced by artificial intelligence. This represents not only a tremendous cost saving, but allows senior crisis management members to prepare for a crisis situation in an environment that accurately mirrors the real crisis situation.

MASA Synergy also allows a reliable validation of disaster plans by offering an accurate simulated disaster generating real figures and statistics.

REPLICATION OPPORTUNITIES

MASA SYNERGY is a Commercial Off the Shelf Software product, relying heavily on artificial intelligence when simulating disasters and major emergencies. It is ready to be used. Since every contingency plan and every disaster is however location specific, specific data sets must be used in for different locations and types of disasters. These data sets are the only element that needs to be changed from one occasion to the other.

How does the project support the implementation of the Sendai Framework targets?

1	Reduce disaster mortality by 2030	X	Real validation and testing of contingency plans, instead of vague assumptions or guessing, will contribute to the accuracy of these plans. As a result plans can be updated with as leading criteria such as disaster mortality; number of affected people; economic loss; infrastructure damage and disruption.
2	Reduce number of affected people by 2030	X	
3	Reduce economic loss by 2030	X	
4	Reduce infrastructure damage and disruption of services by 2030	X	
5	Increase countries with DRR national/ local strategies by 2020		
6	Enhance international cooperation to developing countries		
7	Increase the availability of and access to EWS* and DR information to people by 2030		

How does the project contribute to the ARISE Themes?

1	Disaster Risk Management Strategies	X	Risk assessment and testing of Contingency plans will lead to better Disaster Risk Management Strategies.
2	Investment metrics		
3	Benchmarking and Standards	X	Validation of contingency plans and training of senior crisis staff in a realistic environment generates real figures and statistics, allowing users to test out alternative response strategies.
4	Education and Training	X	
5	Legal and Regulatory		
6	Urban Risk Reduction and Resilience	X	Local governments and businesses are able to validate their contingency plans based on real data and to test out their response strategies. MASA SYNERGY also allows testing of preventative action.
7	Insurance		

For More Information



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