



Modelling crisis management for improved action and preparedness

CRISMA offer for Emergency Resource Management



**CRISMA Business Day
4th June 2015, Brussels
Oren Deri - NICE**



Emergency Resource Management Application

- **The Offer:**
 - Infrastructure for **table top exercise** training for **commanders of emergency organizations**

- **Key functions of the core/kernel:** Integrated system that contains a realistic simulator with full suite of tools and user interfaces

- **The targeted market(s):**
 - Profiles of the Clients/users: Crisis Managers at operative, strategic and tactical levels.
 - Geographical areas: Worldwide

Emergency Resource Management System

Main Concept

- **Goals:** Using models and simulations for resource management training purposes.
- **Stakeholders:** Crisis Managers at operative, strategic and tactical levels.
- **Resources:** The typical resources used for emergency situations management (for example: Hospital-Ambulance-Patient interaction)

Commander
Decisions



Dispatch
Ambulances



Input
World State

Realistic
Simulations



Feedback

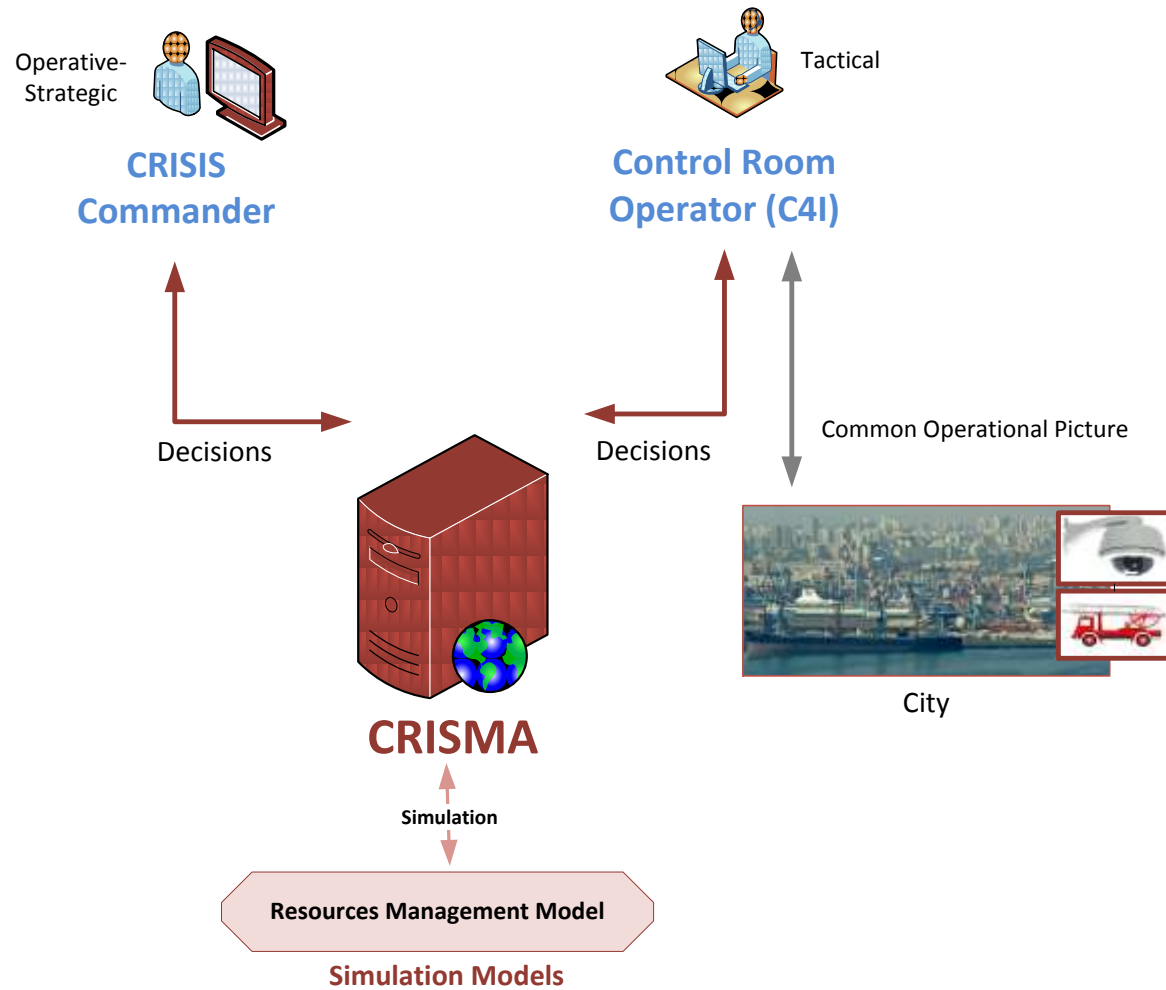
Output
World State



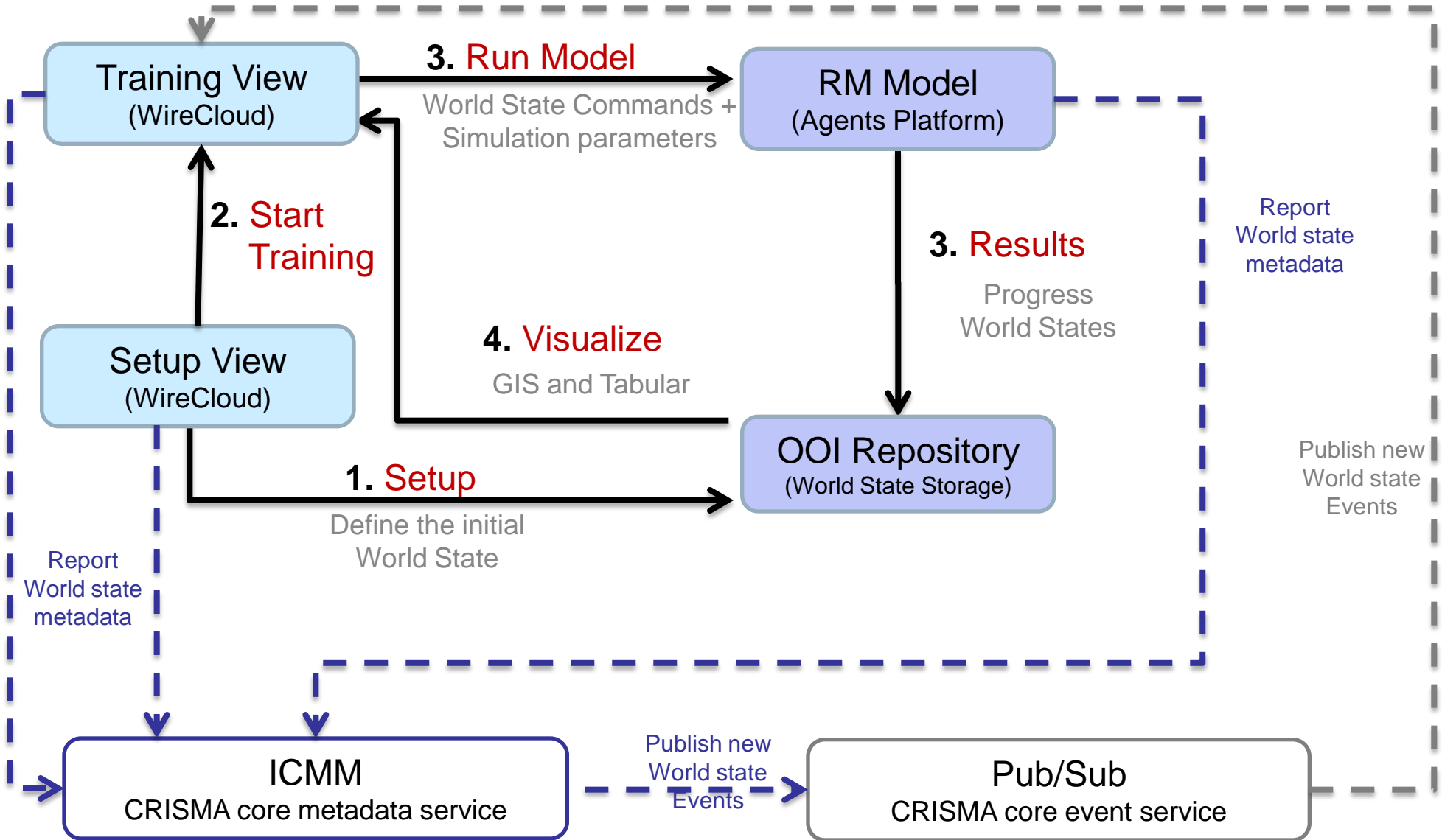
Patient
Health

Emergency Resource Management System

Stakeholders Diagram

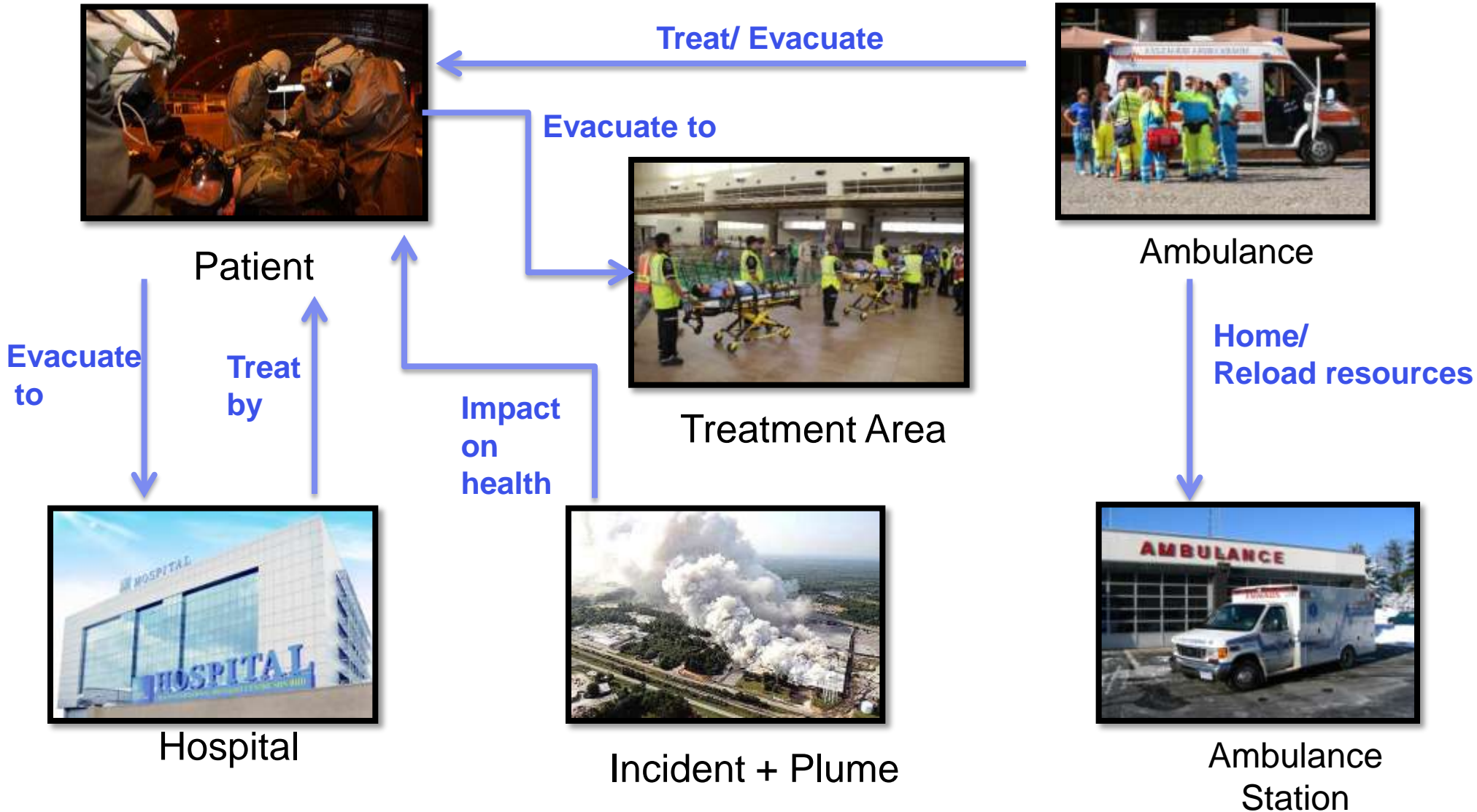


Common Workflow of Integrated components



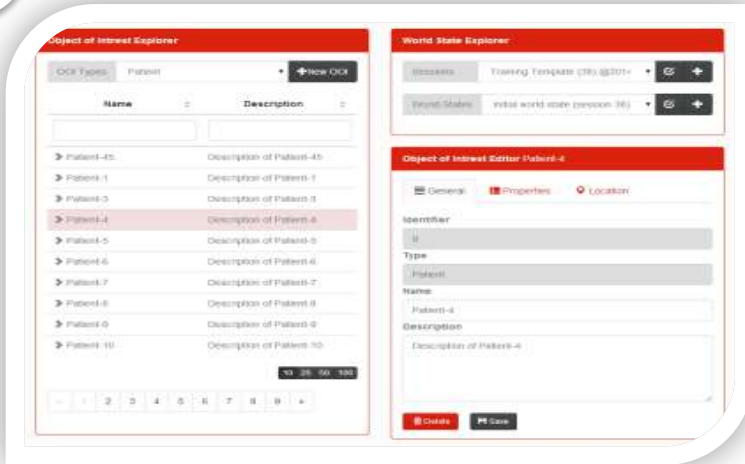
Core principles in creating RM simulation model

Model takes commander decisions and provides realistic simulation across time and location

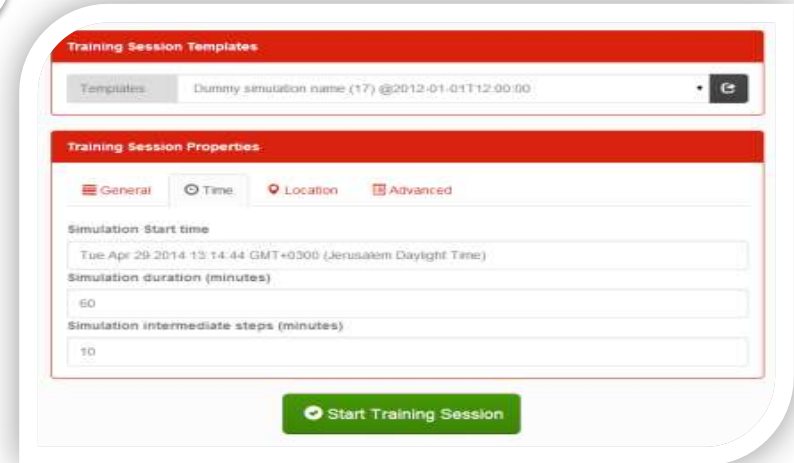


User-Interface Overview (Wire cloud views)

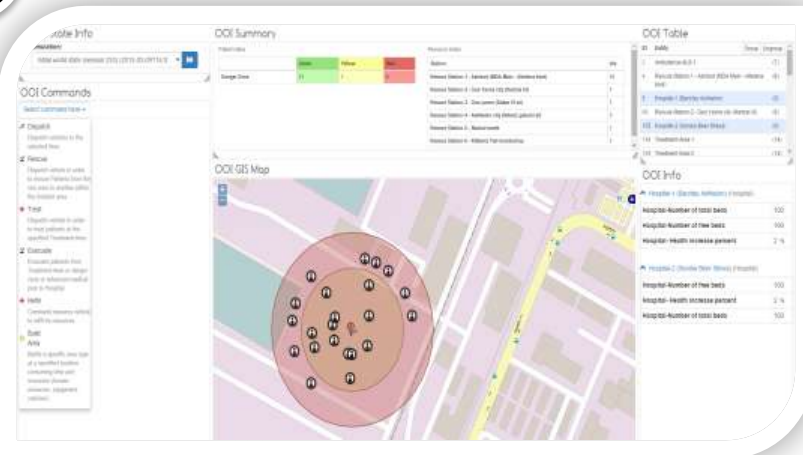
1 Administration - Administrator



2 Training Setup - Trainer



3 Training - Trainee (or CRISMA operator)



4 Debriefing - Evaluator



Resource Management Setup View

Time

- Simulation virtual time
- Simulation duration in minutes
- Intermediate world state

Location

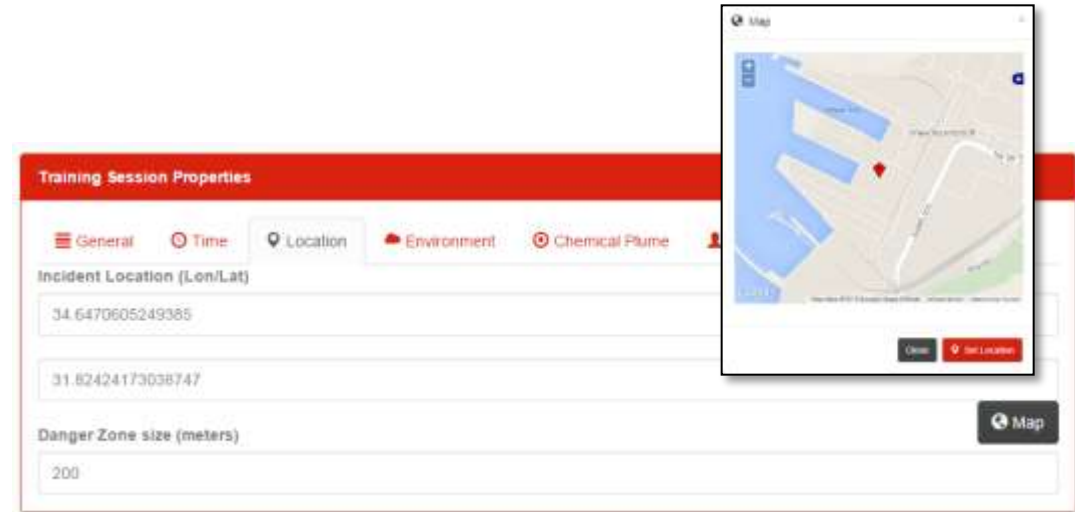
- Incident geographic location
- Danger zone radius in meters

Environment

- Day or Night, Summer or Winter, Urban or Highway (affect Vehicle speed)
- Wind condition – Speed and Direction (affect Chemical Plume)

Resources Distribution

- Ambulances availability and location
- Patients categories (Children, Adults, Ill adults and Elderly) and distribution around Incident location



Resource Management Training View

World state selector

Patients Status

Resource Ambulances

Entities
Ambulances, Hospitals, MDA Stations, etc'

World State Info

Simulation: Initial world state (session 253) (2015-03-09T14:00) [M]

OOI Commands

Select command here ->

- Dispatch**
Dispatch vehicles to the selected Area
- Rescue**
Dispatch vehicle in order to rescue Patients from the area area to another within the incident area
- Treat**
Dispatch vehicle in order to treat patients at the specified Treatment Area
- Evacuate**
Evacuate patients from Treatment Area or danger zone or advanced medical point to Hospital
- Refill**
Command resource vehicle to refill its resources
- Build Area**
Builds a specific area type at a specified location considering time and resources (human resources, equipment, vehicles)

Commander's Commands

OOI Summary

Patient status

| | Green | Yellow | Red |
|-------------|-------|--------|-----|
| Danger Zone | 21 | 1 | 3 |

Resource status

| Station | Idle |
|--|------|
| Rescue Station-1 - Ashdod (MDA Main - Ahtelena kvil) | 10 |
| Rescue Station-2 - Gan Yaacov city (Hertzel st) | 1 |
| Rescue Station-3 - Gan yaacov (Dakar 16 st) | 1 |
| Rescue Station-4 - Ashkelon city (Kibetz gahlot st) | 3 |
| Rescue Station-5 - Nachal annek | 1 |
| Rescue Station-6 - Kibbata Yad-mordechai | 1 |

OOI Table

| ID | Entity | Group | Ungroup |
|-----|--|-------|---------|
| 2 | Ambulance-ALD-1 | | (7) |
| 4 | Rescue Station-1 - Ashdod (MDA Main - Ahtelena kvil) | | (8) |
| 5 | Hospital-1 (Barzilai Ashkelon) | | (3) |
| 69 | Rescue Station-2 - Gan Yaacov city (Hertzel st) | | (8) |
| 115 | Hospital-2 (Soroka Beer Sheva) | | (3) |
| 158 | Treatment Area-1 | | (14) |
| 159 | Treatment Area-2 | | (14) |



OOI Info

Hospital-1 (Barzilai Ashkelon) (Hospital)

| | |
|-----------------------------------|-----|
| Hospital-Number of total beds | 100 |
| Hospital-Number of free beds | 100 |
| Hospital- Health increase percent | 2 % |







Hospital-2 (Soroka Beer Sheva) (Hospital)

| | |
|-----------------------------------|-----|
| Hospital-Number of free beds | 100 |
| Hospital- Health increase percent | 2 % |
| Hospital-Number of total beds | 100 |

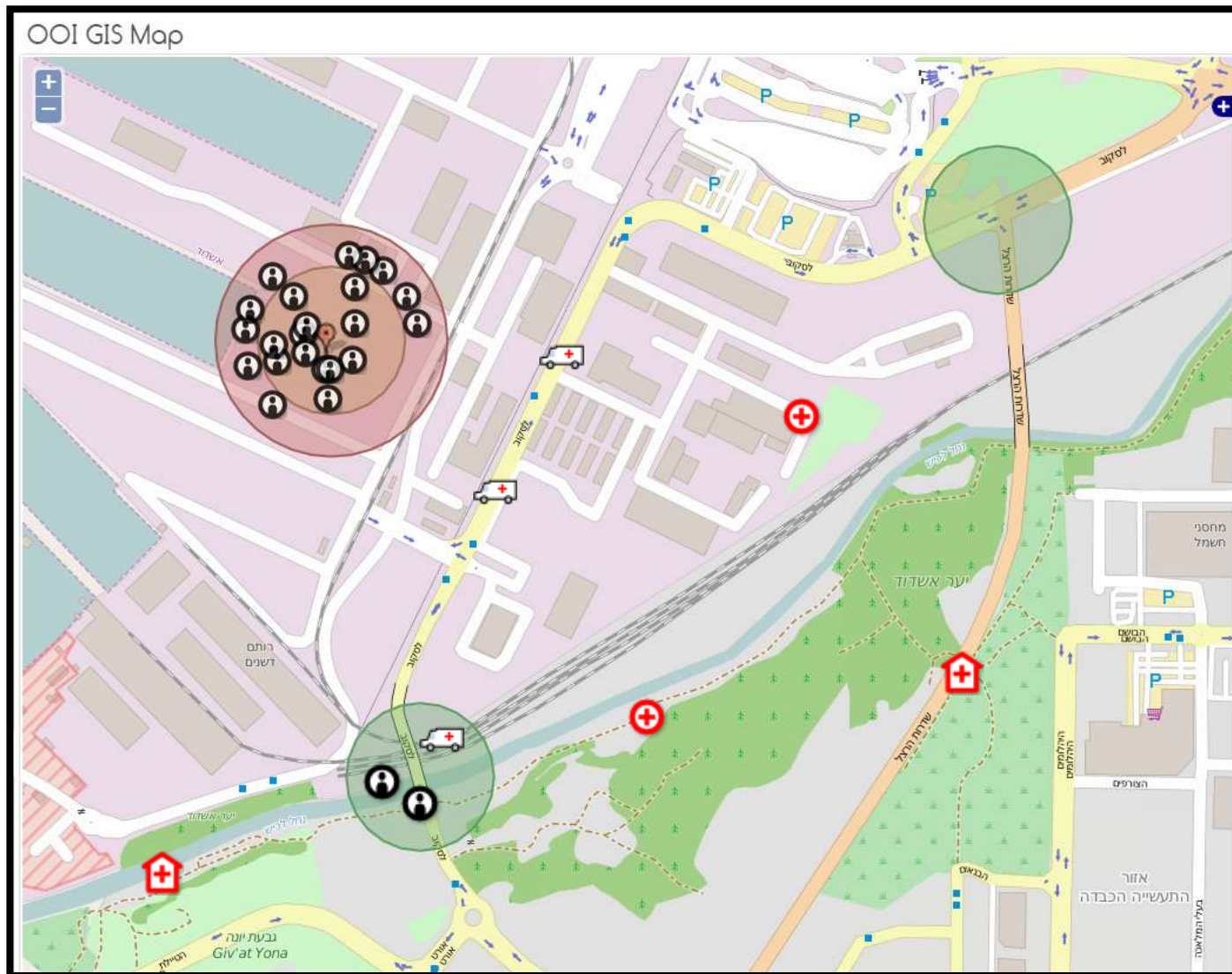
Geographic Map

Resource Management Training View

Geo Map

-  Incident
-  Danger Zone
-  Patients
-  Ambulances
-  MDA Stations
-  Hospitals
-  Treatment Area

- Click map to view entity properties
- Hover entity to view it's name



Resources Decisions → Commands

- Dispatch
Dispatch vehicles to the selected Area
- ✓ Rescue
Dispatch vehicle in order to rescue Patients from the one area to another within the incident area
- + Treat
Dispatch vehicle in order to treat patients at the specified Treatment-Area
- ✓ Evacuate
Evacuate patients from Treatment-Area or danger zone or advanced medical post to Hospital
- + Refill
Command resource vehicle to refill its resources
- 🏠 Build Area
Builds a specific area type at a specified location consuming time and resources (human resources, equipment, vehicles)

Dispatch Command

- Send Ambulances to defined area. Upon arrival Ambulance wait form command

Evacuate Command

- Send ambulances to evacuate patients from the selected area to the selected hospital

Rescue Command

- Send ambulances to rescue patients from danger zone
- Patients will be carried to the defined treatment area

Treat Command

- Send ambulances to patients at the treatment area
- Optional: Evacuate patients automatically once

Refill Command

- Send ambulances to refill resources at it home station or at a dedicated refill area

Build Area Command

- Send ambulances to build area at the selected location
- Available Areas: Treatment, Loading, Staging, Refill, etc'

Resource Management In Progress Training

In-Progress Training

- View current patients and ambulances state via map and status tables
- Jump between world states
- Add intermediate world state commands



OOI Summary

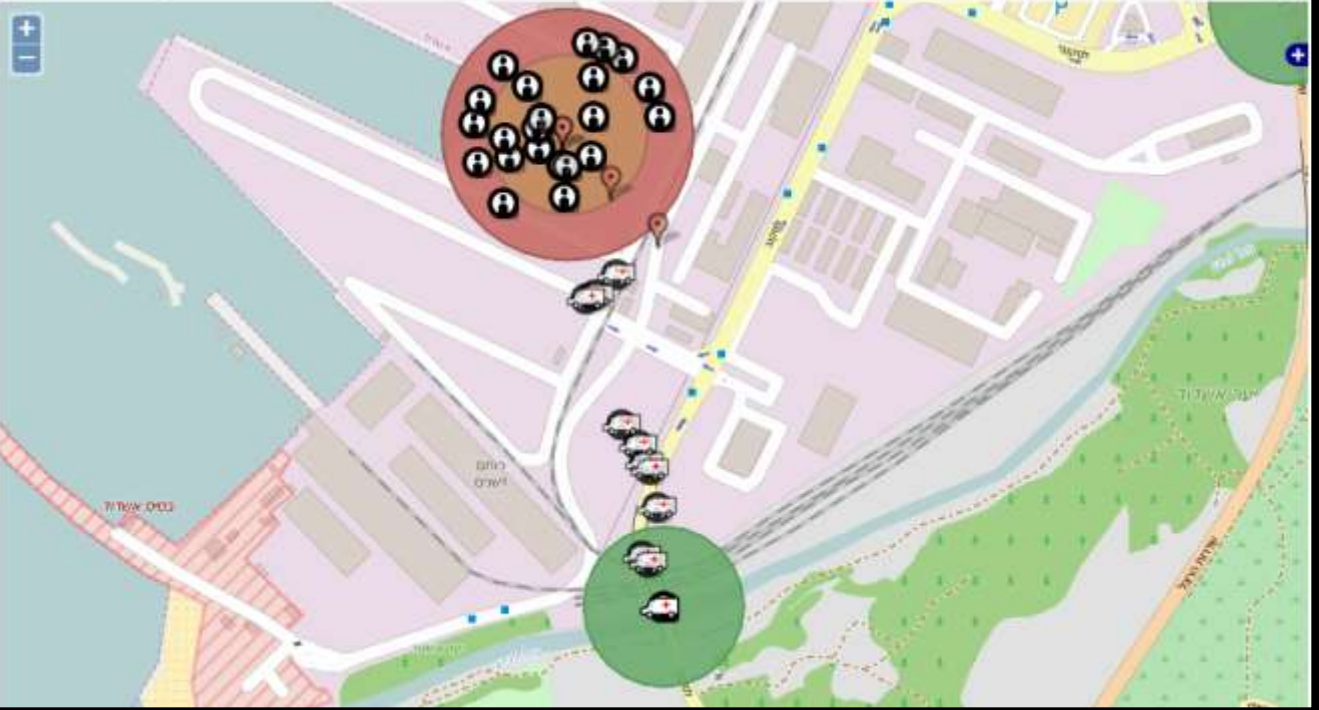
Patient status

| | Green | Yellow | Red |
|------------------|-------|--------|-----|
| Ambulance-ALS-1 | 0 | 0 | 1 |
| Treatment Area-3 | 5 | 1 | 0 |
| Danger Zone | 3 | 4 | 0 |
| Ambulance-BLS-5 | 1 | 0 | 0 |
| Ambulance-BLS-4 | 0 | 1 | 0 |
| Ambulance-BLS-3 | 1 | 0 | 0 |

Resource status

| Station | Idle | Rescue | Treat |
|--|------|--------|-------|
| Rescue Station-1 - Ashdod (MOA Main - Altelena blvd) | | 5 | 5 |
| Rescue Station-2 - Gan Yavne city (Hertzel st) | 1 | | |
| Rescue Station-3 - Gan yavne (Dakar 15 st) | 1 | | |
| Rescue Station-4 - Ashkelon city (Kibutz galuiot st) | 3 | | |
| Rescue Station-5 - Nachal sopek | 1 | | |
| Rescue Station-6 - Kibbutz Yad-mordechay | 1 | | |

OOI GIS Map



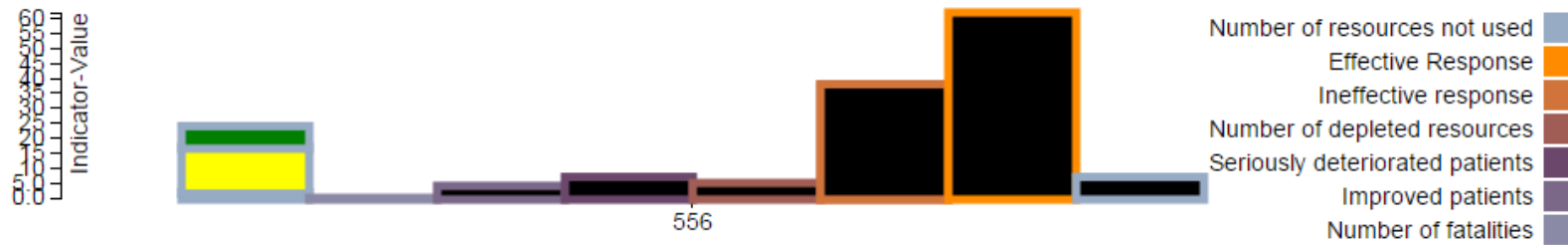
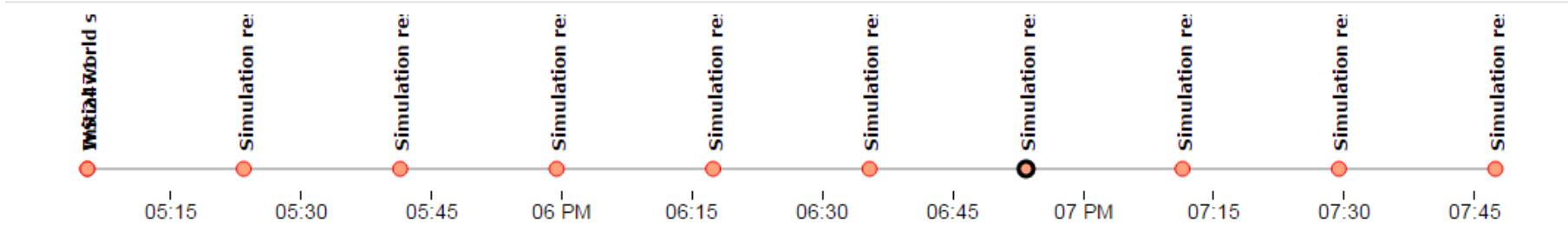
Resource Management **Debriefing View**

Simulation session world state visual tree

CRISMA Indicator View

Group indicators by:

WorldState Indicator



Indicators values

Conditions of the Offer

- **Two solutions are offered**
 - **System delivery:** a tailor-made IT system is installed at the customer premises
 - **Service Platform:** the user accesses the required services and products through a web platform located at the cloud

- **Professional Services (Extensibility options)**
 - Custom resources (OOIs)
 - Additional commands
 - User interface views
 - Functional models and simulators

Added-Value on the market

- CRISMA Emergency Resource Management Application offer unmatched flexibility and custom-ability options and based on open source modules and industry standards.
- We believe that **CRISMA** resource management infrastructure can help **Emergency Organizations** around the world to **train** their **commanders** by performing a realistic **table top exercises** that will enhance their decision making capabilities during real incidents

Additional information:

- Resource management platform: <https://crisma-cat.ait.ac.at/ref-app/Reference-Application-for-the-Resource-Management-Training-Support>
- CRISMA Web Site: <http://www.crismaproject.eu/>
- Contact us: <https://crisma-cat.ait.ac.at/contact>