

# Virtual Reality Training Platform CRISE - HyResponse



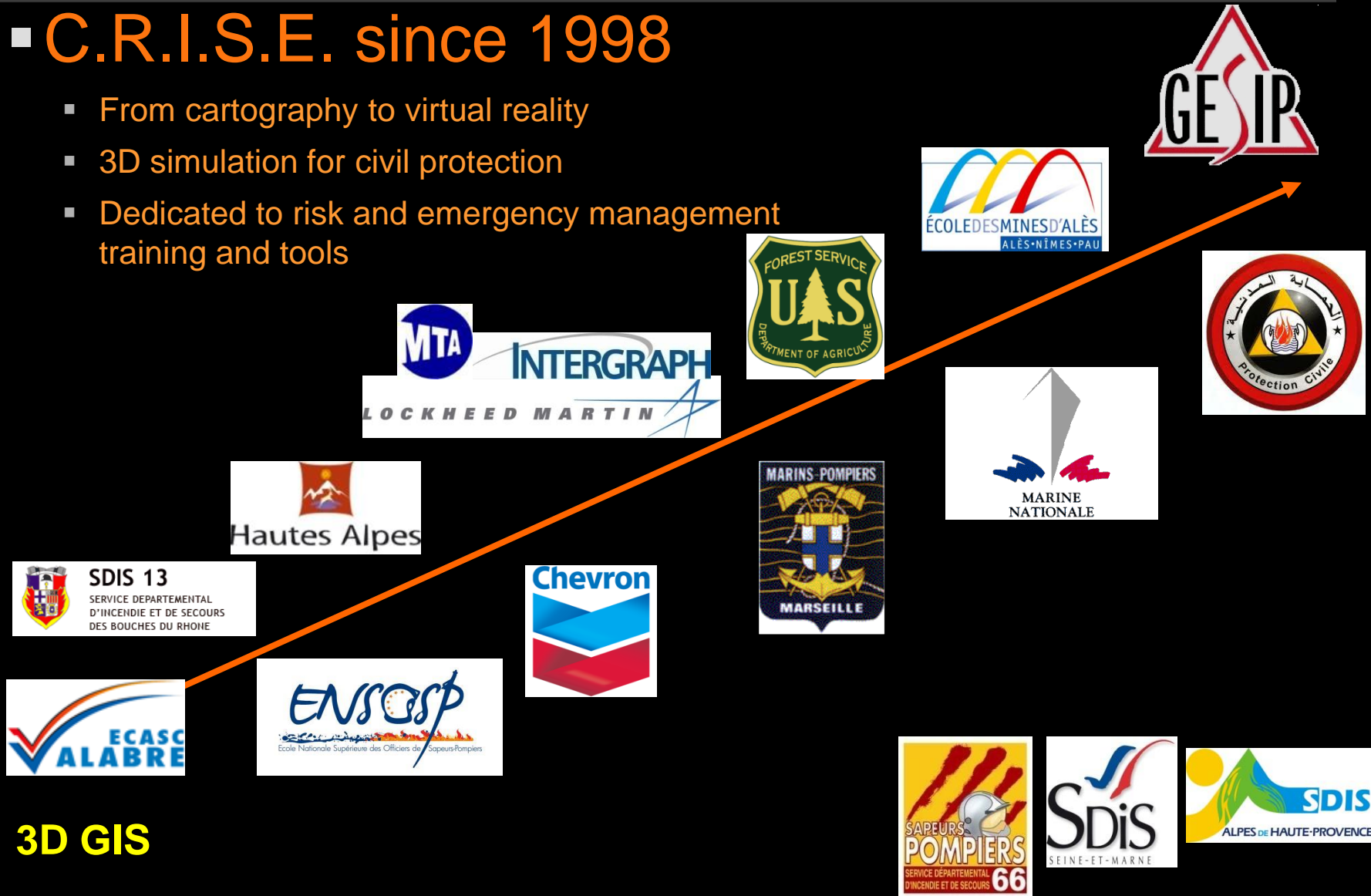
HyResponse



1. **CRISE background** *Who we are, Where we come from*
2. **Our concept, our solutions** *What we do (p6)*
3. **A pedagogig toolbox for HyResponse** *What we do for Hy-Response project (p11)*

## ■ C.R.I.S.E. since 1998

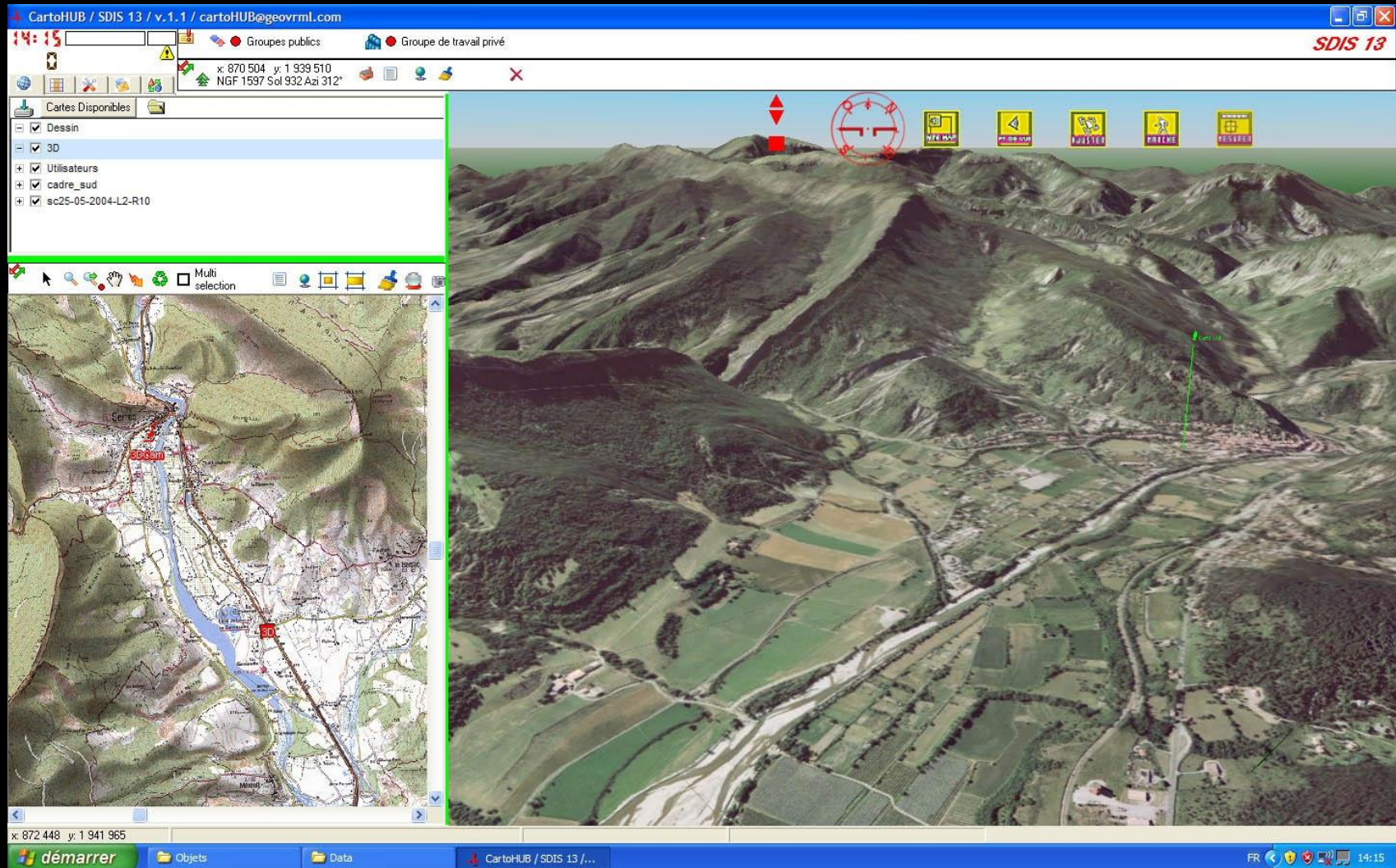
- From cartography to virtual reality
- 3D simulation for civil protection
- Dedicated to risk and emergency management training and tools



**3D GIS**



# 1998 : From maps to 3D – Cooperative Decision Support Systems at Operational & Tactical Level





# Today: Cooperative virtual training platforms from first responders to multi agency sessions

**Put everyone at the heart of the action, from operator to corporate level, multi-agency.**



# EVE: a flexible and comprehensive pedagogic platform

- **Reproduce the operational context accurately**
- **A toolbox for pedagogy**
- **Using your operational tools**

**On-demand events**  
Drag-and-drop objects and behaviors

**Spatial and temporal reality frame**

**Scenarized events**  
Drag-and-drop scenarios threads

**Computer-driven events**  
Automatic evolution of physical phenomena and realistic events



**Visualization**

**Interaction**

**Action**

First person level or commandment level via dedicated interfaces

**Representations**

Team/ Individuals

**Analysis / Decision making / Planning**



# Multi-risk platform

**Urban fires**



**Hazmat**



**Oil platforms**



**Wildfire**



**Chemical risks**



**Threat**



**Radiological risks**



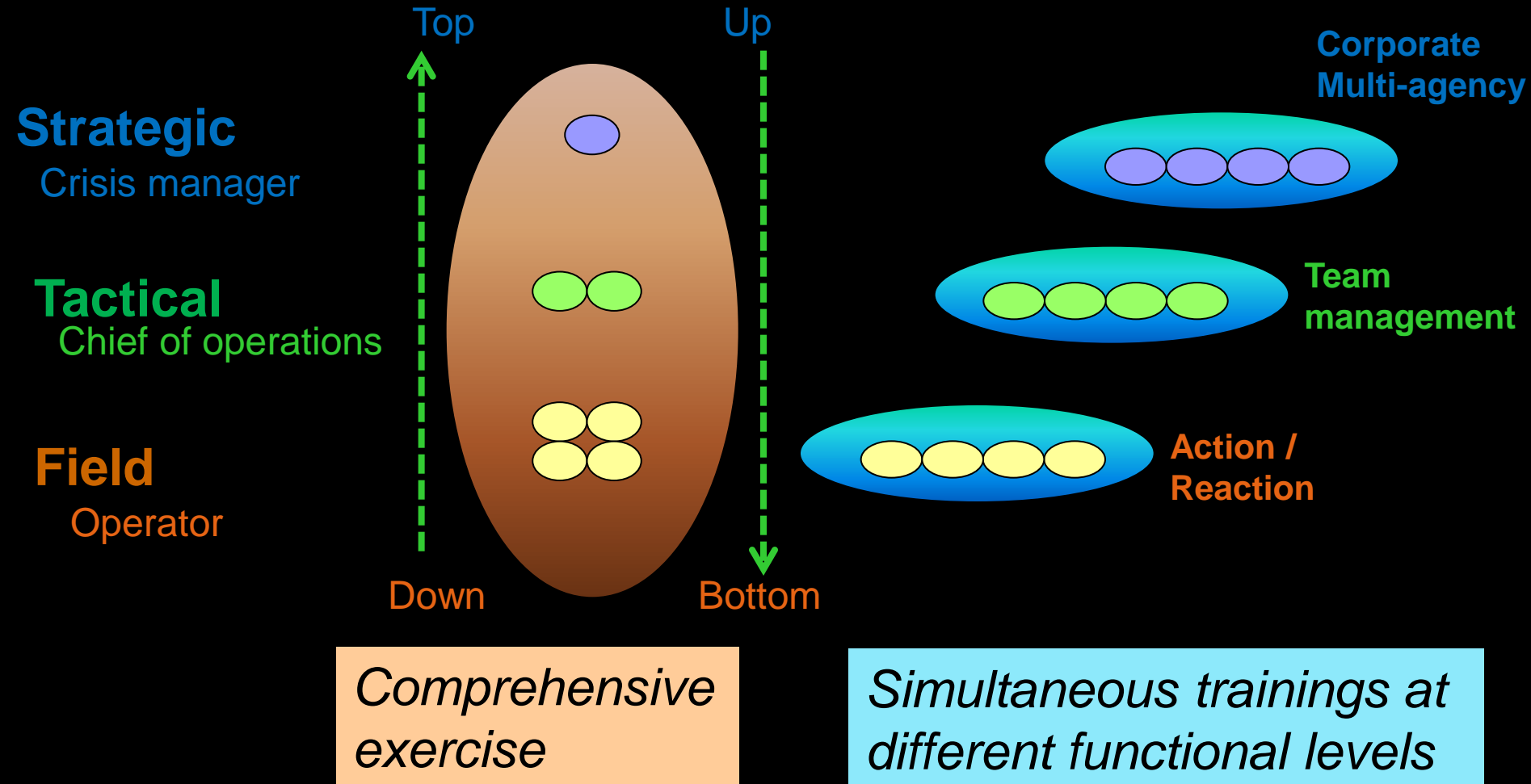
**Industrial risks**



**Naval**



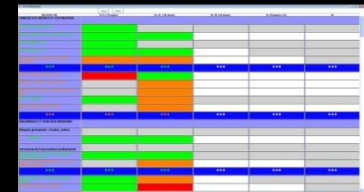
# Multi-level team training exercises





# Pedagogic tools

- **ScenarioManager** *create and manage interactive advanced open ended scenarios*
- **EveAnim** *encompassing tablet-based C3 tool. Shares control, tactical information & display at animation team level.*
- **Metrics** *Live evaluation of the crisis response at team, individual and functional levels. Includes trainees profile management & evaluation.*
- **AAR** *key actions and interactions timeline and screenshots*



## Specialised tools

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- Embedded A.I., F.S.A. and Causality Mngt
- Water network and additives Mngmt
- Interactive fires & wildfires models
- Toxic releases, Heavy gas / Pollution
- Domino effects manager for Industrial risk
- Physics engines
- . . .
- Contextualised, open ended, what-if, high end, scenario driving and awareness tools



## European hydrogen emergency response training program for first responders

- Funded by EC Fuel Cell and Hydrogen Joint Undertaking
- European Hydrogen Safety Training Platform (EHSTP), to facilitate safer deployment of FCH systems and infrastructure
- EHSTP will train first responders to deal with all safety aspects for a range of hydrogen applications, including passenger vehicles, buses, forklifts, refuelling stations, backup power, stationary fuel cells for combined production of heat, etc.





## A pedagogic toolbox for Hy-Response

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- Classroom & Distant Training material
- Tabletop support (Tomorrow's use case)
- ROE & SOP inter-agency validation
- Drill support
- Functional exercise support
- Augmented reality training support
- Full scale, multi agency joinOp & cooperation support

# HyResponse Training setup example



# An EXCON interface





# First responder trainee interface



- Crisis Simulation Engineering



### Agrès

FI3-LMY

2

FI1-SPR

3

FI3-LMY

0

VLTS-STR

0

FI1-VAL

2

FI3-LMY

0

FI1-LMY

1

Ech1-LRS

1

### Contrôle

Eau (500 L)

40%

Binôme 1

21

ARI

Binôme 2

7

ARI

Conducteur

48

ARI

Chef Agrès

18

ARI

### Commande

Action	Personnel	Équipement	Alimentation	Cible
Attaque	Binom1	10m en 110	P108	Escalier RDC
Alim FI	Binom2	40m en 70	B23	Cuisine RDC
Alim CS	Conduct	40m en 70	CS RDC	Salon RDC
Raccord CS		Dévidoir 1	CS étage 1	GAZ RDC
EDF		Dévidoir 2	CS étage2	EDF RDC
GAZ		Eche crochet		Victime
Reco ext		Echelle 2 plans		
Echel main		Echelle 3 plans		
Secour		LDV 500		
		LDV 500		
		LDV 1000		
		LCM		
		LDT		
		20m en 70		
		20m en 70		
		20m en 70		
		20m en 70		

VALIDER

Attaque - Binom1 - LDV 500 - Escalier RDC

STOP

SAP - Binome 2 - Victime Cuisine RDC

STOP

Alimentation - Conducteur - FI - Pot 308

STOP

# Exercises environments examples





# Specific HyResponse multirisk environment









- EVE - Connecté comme: (Hôte) : EMI - Eric Maranne (Créateur du Logiciel, Développement.)



TM  
EC  
Vulc  
Vulc1  
Vulc2  
Victor  
Juuu  
Manu  
Eric

MSD



- EVE - Connecté comme: (Hôte) : EMI - Eric Maranne (Créateur du Logiciel: Développement.)























• EVE - Connecté comme (Hôte) : EMI - Eric Maranne (Créateur du Logiciel. Développement.)







- EVE - Connecté comme: (Hôte) : Emmanuel Vaucher (Auteur du Logiciel, Cartographie / 3D)





# Set-up example

Local Executive



Corporate crisis managers



Incident commander



Fire chief



Medias

Authorities



Session Director





# In-Action & After-Action Analysis Tools

- *Immediate, real time or forensics studies of individual, team or functional activity*

*Organizational learning, Control and Mindfulness mitigation, Inter-individual Coupling, Situational Awareness evaluation, Sense Making, Decision making...*

## Human Factors – Organization Resilience Analysis

