



Two papers were presented at the 4th International Conference on Games and Virtual Worlds for Serious Applications held in Genoa from 29 to 31 October 2012 within the GaLA European network framework.

- Tesei, A., Barbieri, A., Kessel, R., "Survey on Serious Games applied to security, safety and crisis management. User requirements, present solutions and envisaged possible improvements"

This work reports the results of a survey recently conducted in the community of serious games applied to physical security, safety and disaster/crisis management. Serious games with training and learning purposes are particularly focused. The survey is especially addressed to understand current user needs, available solutions and possible need of improvements of SGs in these fields. Although the three mentioned applications are different, they have a variety of features in common, such as need of handling emergency/risk situations, need of high fidelity and high realism (hence, of refined physical modeling), need of computer simulation and virtual reality in order to consider training in scenarios either too risky, too complicated or too expensive to be provided by physical, hands-on simulations.

- Kessel, R., Tesei, A. "Accuracy Requirements for Physical Models in Serious Games"

Many serious games use computer models of physical phenomenon (physical models) that simulate key aspects of the real-world environment within the virtual environment confronting the players. How accurate must the physical models be? One answer for physical models in serious games generally is given here using statistical hypothesis testing. The result is a quantitative test of model accuracy in light of a given application in a serious game defined in terms of 1) the random uncertainties (inherent and measurement) of the real-world phenomenon at issue, and of 2) the level of use of the physical model in the serious game. The accuracy test allows the developers of serious games and physical models to discuss whether more or less accuracy, and hence, more or less use-cost for a physical model, is required for

the serious game. The accuracy test is illustrated using an example from serious gaming for maritime security using CMRE's OpenSea Tactical Theatre Simulator.

The [fourth IEEE International Conference in Games and Virtual Worlds for Serious Applications \(2012\)](#) aimed to meet the significant challenges of the cross-disciplinary community that work around these serious application areas by bringing the community together to share case studies of practice, to present new frameworks, methodologies and theories and to begin the process of developing shared cross-disciplinary outputs. It was the first of a series of conferences organized by the Games and Learning Alliance (GaLA) project.

[GaLA](#) is the Network of Excellence on serious games co-funded by the European Union under the 7th Framework Programme, Information Society Technologies, ICT, Technology-Enhanced Learning.

GALA aims to shape the scientific community and build a European Virtual Research Centre aimed at gathering, integrating, harmonizing and coordinating research on SGs and disseminating knowledge, best practices and tools as a reference point at an international level. The other key focuses of the project are: the support to deployment in the actual educational and training settings; the fostering of innovation and knowledge transfer through research-business dialogue; the development high-quality didactics on SG by promoting and supporting courses at Master and PhD level.