

2008 SIWN Congress Panel Discussions

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Theme: What are the real complexity challenges that distributed systems are facing?

Panelists

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- Prof Ian Marshall, Lancaster University, UK
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Challenging Issues in developing distributed applications

- Heterogeneity is a main challenging issue
 - Architecture (web, semantic web, service, grid, agents)
 - Coupling in decision making (rules, adaptive, learning, reasoning)
 - Models
 - Sizes of the systems
- Socio-economic nature is also an important issue in developing distributed applications.

Examples of future complex distributed systems

- Large-scale distributed pervasive embedded systems.
- Environmental systems with closed loops from sensor networks to monitoring and decision support
- Large-scale future generation (4G) / autonomic communication/Internet
- Biological cellular networks
- Heterogeneous healthcare systems

Potential solutions

- To engineer emergence, swarming, self-organisation.
- Multi-scale multi-agent based modelling and simulation.
- Service-oriented software architectures