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DESCRIPTION

Computing infrastructures and systems are rapidly developing and so are novel ways to map, control and execute scientific applications which become more and more complex and collaborative. Computational and storage capabilities, databases, sensors, and people need true collaborative tools. Over the last years there has been a real explosion of new theory and technological progress supporting a better understanding of these wide-area, fully distributed sensing and computing systems. Big Data in all its guises require novel methods and infrastructures to register, analyze and distill meaning.

FGCS aims to lead the way in advances in distributed systems, collaborative environments, high performance and high performance computing, Big Data on such infrastructures as grids, clouds and the Internet of Things (IoT).

The Aims and Scope of *FGCS* cover new developments in:

[1] Applications and application support: Novel applications for novel e-infrastructures
Complex workflow applications
Big Data registration, processing and analyses
Problem solving environments and virtual laboratories
Semantic and knowledge based systems
Collaborative infrastructures and virtual organizations
Methods for high performance and high throughput computing
Urgent computing
Scientific, industrial, social and educational implications
Education

[2] Methods and tools: Tools for infrastructure development and monitoring
Distributed dynamic resource management and scheduling
Information management
Protocols and emerging standards
Methods and tools for internet computing
Security aspects

[3] Theory: Process specification; Program and algorithm design
Theoretical aspects of large scale communication and computation
Scaling and performance theory
Protocols and their verification

AUDIENCE

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The Grid is a rapidly developing computing structure that allows components of our information technology infrastructure, computational capabilities, databases, sensors, and people to be shared flexibly as true collaborative tools. Over the last 3 years there has been a real explosion of new theory and technological progress supporting a better understanding of these wide-area, fully distributed computing systems. After the advances made in distributed system design, collaborative environments, high performance computing and high throughput computing, the Grid is the logical next step.

The new Aims and Scope of FGCS will cover new developments in:

[1] *Grid Applications and application support*: Novel applications eScience and eBusiness applications Problem solving environments and virtual laboratories Grid economy Semantic and knowledge based grids Collaborative Grids and virtual organizations High Performance and high throughput computing on grids Complex application workflows Scientific, industrial and social implications Grids in education

[2] *Grid methods and middleware*: Tools for grid development: monitoring and scheduling Distributed dynamic resource management Grid- and web-services Information management Protocols and emerging standards Peer to peer and internet computing Pervasive computing Grid Security

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