

## Global Computing. Programming Environments, Languages, Security, and Analysis of Systems

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The goal of the IST/FET proactive initiative on Global Computing is to - tain models, frameworks, methods, algorithms to build systems that are ?exible, dependable, secure, robust and e?cient. The dominant concerns are those of handling the co-ordination and interaction, security, reliability, robustness, fa- ure modes, and control of risk of the entities in the system and the overall design, description and performance of the system itself. Completely di?erent paradigms of computer science may have to be developed to tackle these issues e?ectively. The research should concentrate on systems having the following characteristics: – The systems are composed of autonomous computational entities where - tivity is not centrally controlled, either because global control is impossible or impractical, or because the entities are controlled by di?erent owners. – The computational entities are mobile, due to the movement of the physical platforms or movement of the entity from one platform to another. – The con?guration varies over time. For instance, the system is open to the introduction of new computational entities and likewise their deletion. The behavior of the entities may vary over time. – The systems operate with incomplete information about the environment. For instance, information becomes rapidly out of date and mobility requires information about the environment to be discovered. The ultimate goal of the research action is to provide a solid scienti?c foundation for the design of such systems, and to lay the groundwork for achieving e?ective principles for building and analyzing such systems.

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