Preface
Fujitsu Middleware Supports
Reliability in ICT Systems

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Information and Communication Technology (ICT) systems are intimately connected with mission-critical services, not only those that support corporate activities but also those that support people's lifestyles and social infrastructures. With the continuing progress in Internet and mobile technologies, ICT systems will undoubtedly continue to grow in importance. This suggests that more and more ICT systems will be positioned as mission-critical systems, and for this reason ICT system reliability will become increasingly vital to corporate activities and the functioning of society.

Fujitsu has been constructing mission-critical systems ever since the mainframe era, particularly in Japan. Our involvement in this field tells the history of our mission to raise the reliability of systems, and from another viewpoint we could say it represents the history of our efforts to raise the reliability of Fujitsu middleware. As well as catering to our customers' strict reliability needs, our challenge has been, and still is, to push back the frontiers of the computer-using world by achieving higher reliability. Fujitsu has provided hardware, OSs, and middleware and developed many application programs. Furthermore, we have integrated customer systems and maintained the life-cycles of these systems. Through the broad range of expertise we have accumulated from these activities, we have obtained a much more extensive knowledge about reliability and operation management. This knowledge is currently being applied in a wide range of Fujitsu open technology products, including middleware.

With the current focus on the Internet and open technology, there is a tremendous need for agility in responding to changes in ICT systems (e.g., extra services, service changes, capacity upgrades), and this need is one of the reasons that Service Oriented Architecture

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(SOA) has been in the spotlight. Furthermore, in addition to the need for high-quality components in an ICT system, to guarantee system reliability in a rapidly changing environment, it is also important to quickly eliminate the problems caused by the complicated combinations of components that are used. In response, in February 2002, Fujitsu announced a new approach called TRIOLE for meeting these requirements in a short amount of time.

TRIOLE is designed to cater to aspects of next-generation ICT systems ranging from configuration to maintenance, aims to meet their agility and reliability needs, and provides various concrete solutions such as TRIOLE Template for this purpose. TRIOLE's basic concept is a system construction based on building blocks. TRIOLE solves problems encountered in the construction, expansion, and maintenance of ICT infrastructures with great agility by changing the building blocks of configured systems in response to requirements for extra processing capacity, additional services, and other needs.

In TRIOLE, the blocks that constitute the fundamental elements of system configuration are prefabricated building units that incorporate various basic software and hardware components. Of these components, the middleware that constitutes a core component of ICT systems is the key to achieving high reliability through TRIOLE solutions. Fujitsu's three major middleware products — Interstage, Systemwalker, and Symfoware — are expected to make strong contributions to TRIOLE. To help them do so, they are based on open standard specifications and are continually improved to increase the reliability of ICT systems.

Fujitsu's vision for TRIOLE is that it will enable the industrialization of new construction methods for ICT systems on a global scale. In this special issue, we describe how Fujitsu has been developing TRIOLE, with the focus on enhancing the reliability of the Interstage, Systemwalker, and Symfoware middleware products that play a major role in maintaining the reliability of TRIOLE solutions. In developing middleware, we have put the knowledge we have gained during the mainframe era and onwards to good use and focused on the needs of the open era. I sincerely hope that this issue will give readers a good understanding of what Fujitsu has been doing in this area.