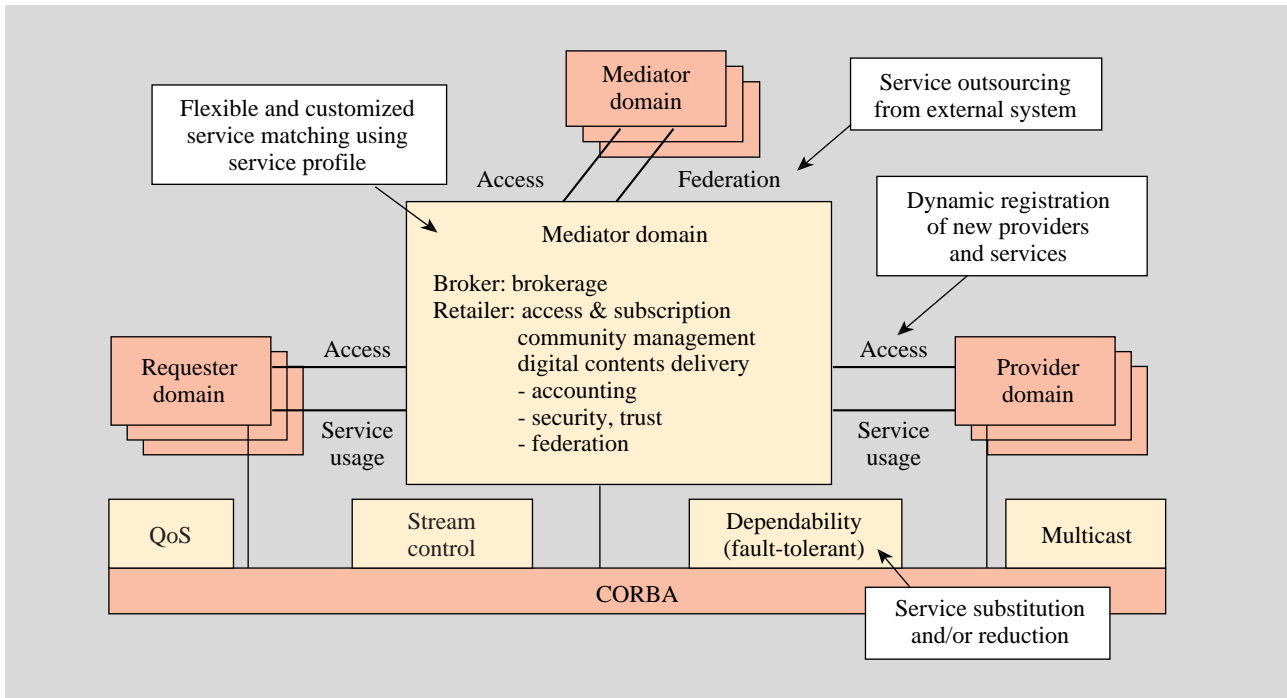# ADSS: Autonomous Decentralized Service System
— An Agent-based Software Architecture for Large Scale and Ever Changing Information Market Places —

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<Architecture> ADSS is a service system architecture based on the concept of an autonomous decentralized system. Current service systems do not sufficiently consider the human side of communication, such as the emergence of new knowledge through the exchange of information between participants. To solve this problem, a new service system architecture (ADSS) has been developed. ADSS provides an overall system configuration consisting of a group of agents endowed with life system-like autonomous properties such as "alive" and "social" functions. It introduces mediator agents that contribute to knowledge emergence.

<Platform> Hitachi is constructing ADSS by making a new middleware platform that manages service system functions in each domain of agents. Each domain is able to get autonomous properties by using this platform. To construct the platform on the top of an open standard, for example CORBA, it is necessary to define the service system model and functional specifications of this system and also define new CORBA services.

<Application> ADSS can be used for various kinds of business applications because customization in brokerage and retail operations, the feature of the service system, is the most important keyword for next-generation information systems. Its current main target applications are;

• An intelligent transport system (ITS) including a mobile information service

• A waste recycling information system

• A local community information system

<Standardization> Hitachi and GMD/Focus, the German national research institute of open communication technology, are participating in a joint project to develop and standardize ADSS technologies. In 1997, Hitachi and GMD/Focus proposed to establish ADSS DSIG (Domain Special Interest Group) to promote their activities in OMG, an international standardization organization of technologies for distributed object computing. Through ADSS DSIG, Hitachi is developing an ADSS model and facilities for the Information Service System.

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